

# **HARFORD COUNTY SOLID WASTE MANAGEMENT PLAN 2015 - 2024**



**Prepared by:  
Department of Public Works  
Division of Environmental Services**

## TABLE OF CONTENTS

<b>Introduction</b>		i-1
<b>Chapter I</b>	<b>Rules Governing Solid Waste Management</b>	
	1. Authority and Purpose	I-1
	2. Goals, Objective and Policies for Solid Waste Management	I-2
	3. Integrated Solid Waste Management System	I-3
	4. Conformance with Land Use Plans	I-4
	5. County Government Structure	I-4
	6. Federal, State and Local Laws and Regulations	I-6
	6.1 Federal	I-6
	6.1.1 Federal Statutes Affection Solid Waste Management	I-6
	6.1.2 Federal Regulations Affecting Solid Waste Management	I-8
	6.2 State	I-10
	6.2.1 Maryland Laws Affecting Solid Waste Management	I-10
	6.2.2 Maryland Regulations Affecting Solid Waste Management	I-16
	6.3 Local	I-18
	6.3.1 Harford County Laws Affecting Solid Waste Management	I-18
	6.3.2 Harford County Regulations Affecting Solid Waste Mgt.	I-19
<b>Chapter II</b>	<b>Population, Employment, and Land Use</b>	
	1. General	II-1
	2. Population	II-2
	3. Municipalities	II-2
	4. Employment	II-2
	5. Zoning and Comprehensive Land Use	II-3
	5.1 Zoning Requirements Affecting Solid Waste Facilities	II-4
	6. Subsidiary Plan	II-4
<b>Chapter III</b>	<b>Solid Waste General, Collection, and Acceptance Systems</b>	
	1. Solid Waste Generation	III-1
	1.1 Introduction	III-1
	1.2 Residential Waste	III-2
	1.3 Commercial Waste	III-3
	1.4 Land Clearing and Construction and Demolition Debris	III-4
	1.5 Controlled Hazardous Substances	III-4
	1.6 Dead Animals	III-5
	1.7 Bulky Waste	III-5
	1.8 Scrap Tires	III-6
	1.9 Septage and Wastewater Treatment Biosolids	III-6

## **TABLE OF CONTENTS (CON'T)**

1.10	Water Treatment Plant Residuals	III-7
1.11	Used Oil and Antifreeze	III-8
1.12	Stale Gasoline/Oil Mixture	III-9
1.13	Asbestos	III-9
1.14	Agricultural Wastes	III-9
1.15	Other Recycling Programs	III-10
	1.15.1 Multi-Family Residential Sector	III-10
	1.15.2 Recycling – Publicly Funded Schools	III-12
	1.15.3 Fluorescent Lights	III-17
	1.15.4 Latex Paint	III-18
	1.15.5 Used Cooking Oil	III-18
1.16	Roadside Litter	III-19
2.	Historical and Projected Waste Quantities	III-19
3.	Imported Wastes	III-20
4.	Exported Wastes	III-21
5.	Calculation of MSW Recycling Rate	III-21
6.	Solid Waste Collection Systems	III-21
6.1	Private, Licensed Waste Collection Companies	III-22
6.2	Municipal Waste Collection	III-23
6.3	Self-Hauling	III-23
7.	Existing Licensed County Solid Waste Acceptance Facilities	III-24
7.1	Harford Waste Disposal Center	III-24
7.2	Harford Waste Disposal Center Yard Trim Facility	III-27
7.3	Harford Waste-to Energy Facility	III-28
8.	Existing Licensed Privately Owned Solid Waste Acceptance Facilities	III-31
8.1	Auston Processing Facility and Transfer Station	III-31
9.	Contested Solid Waste Disposal Facilities	III-32

## **Chapter IV Assessment of Waste Disposal System**

1.	Management Needs – Municipal Solid Waste	IV-1
1.1	Waste Reduction, Public Outreach and Education	IV-2
1.2	Recycling	IV-4
	1.2.1 Residential Sector	IV-4
	1.2.2 Commercial Sector	IV-5
	1.2.3 Harford County Department of Parks and Recreation Facilities	IV-6
1.3	Collection	IV-7
	1.3.1 Assessment of Collection Alternatives	IV-8
	1.3.2 Evaluation of the Existing Collection System	IV-13
1.4	County-Provided Solid Waste Disposal Systems	IV-14
	1.4.1 HWDC Landfill	IV-14

## **TABLE OF CONTENTS (CON'T)**

1.4.2	Harford Waste-to-Energy Facility	IV-15
1.5	County-Provided Recycling Disposal Systems	IV-16
1.5.1	HWDC Recycling Transfer Station	IV-16
1.5.2	Yard Trim Facilities	IV-17
1.5.3	Homeowner Convenience Drop-off Facilities	IV-18
1.6	Food Waste Collection and Composting	IV-18
2.	Special Waste Management	IV-22
2.1	Construction and Demolition Disposal	IV-22
2.2	Asbestos	IV-25
2.3	Special Medical Waste	IV-25
2.4	Hazardous Waste	IV-25
2.5	Household Hazardous Waste	IV-26
2.6	Electronics Recycling	IV-26
2.7	Emergency Response for Hazardous Waste Spills	IV-26
3.	Constraints on New Solid Waste Acceptance Facilities	IV-27

### **Chapter V Solid Waste Management System Plan of Action**

1.	General Approach and Schedule for MSW Disposal	V-1
1.1	HWDC Landfill	V-1
1.2	Harford Waste-to-Energy Facility	V-2
2.	Exploration of New Solid Waste Transfer Station and Second Homeowner Drop-off Facility	V-4
3.	Exploration of Other Solid Waste Disposal Solutions	V-6
4.	Homeowner Drop-off Center	V-7
5.	Mulch and Compost Facilities	V-8
6.	Debris Management	V-9
7.	Future Recycling Requirements and Opportunities	V-10
7.1	Event Recycling	V-10
7.2	Other Recycling Opportunities	V-12
8.	Funding	V-13

### **List of Appendices**

Appendix 1	Harford County Organizational Chart
Appendix 2	DPW Organizational Chart
Appendix 3	Map of Harford County
Appendix 4	Harford County Land Use Map
Appendix 5	Population Projections
Appendix 6	Employment Projections
Appendix 7	Relevant Zoning Requirements
Appendix 8	Historical Solid Waste Quantities

## **TABLE OF CONTENTS (CON'T)**

Appendix 9	Waste Generation Per COMAR 26.03.03
Appendix 10	Population, Employment, Solid Waste Recycling Projections
Appendix 11	Historical Recycling Rates
Appendix 12	Waste Diversion Data
Appendix 13	List of Licensed Commercial Haulers
Appendix 14	Harford County Solid Waste Acceptance Facilities Location Map
Appendix 15	January 2014 Public Opinion Phone Survey
Appendix 16	Presentation and Summary of Community Input July 2014
Appendix 17	Bill No. 15-004 (To be submitted to MDE after Council approves Plan)
Appendix 18	Certification of the Department of Planning and Zoning

---

## **INTRODUCTION**

---

The Harford County, Maryland Solid Waste Management Plan 2015 – 2024 (the “Plan”) has been prepared in accordance with regulations contained in Title 26, Department of the Environment, Subtitle 03 Water Supply, Solid Waste, And Pollution Control Planning and Funding, Chapter 03 Development of County Comprehensive Solid Waste Management Plans. The Plan addresses a minimum 10-year planning period, and is required to be reviewed by the County, and updated if necessary, every three years. The County contacted the municipalities and Federal agencies for copies of their individual Solid Waste Management Plans; however, no Plans were provided for inclusion into this Plan.

**CHAPTER I**  
**RULES GOVERNING**  
**SOLID WASTE**  
**MANAGEMENT**

## **RULES GOVERNING SOLID WASTE MANAGEMENT**

Harford County, Maryland (the “County”), is a body politic and corporate and a political subdivision of the State of Maryland. The Harford County Comprehensive Solid Waste Management Plan for the planning years 2015 – 2024 (the “Plan”), sets forth the policies, goals, and plans for the comprehensive management of solid waste in the County. The Plan was prepared by the Department of Public Works, Division of Environmental Services in accordance with Title 9, Subtitle 5 of the Environment Article, Annotated Code of Maryland. State law requires that the Plan must be adopted by the Harford County Council through the public hearing process and submitted to the Maryland Department of the Environment (MDE) for approval.

### **1. Authority and Purpose**

State law requires the County to develop a “Solid Waste Management Plan” for the entire County, including municipal corporations. The Plan must cover a ten-year planning period and describe the solid waste disposal systems, solid waste acceptance facilities, and the systematic collection and disposal of solid waste by public or private entities. In accordance with §9-503 of the Environment Article of the Annotated Code, the County must review its Plan every three years and; based on this review, amend the Plan as necessary if the County considers a revision to be necessary, or if MDE requires a revision. If an amendment is necessary, the County must conduct a public hearing prior to adopting, amending, or revising the Plan. The ten-year plan must be organized and contain the information required in accordance with COMAR 26.03.03, “Development of County Solid Waste Management Plans.”

The purpose of this Plan is to describe the existing and planned County programs which will provide for the comprehensive management of solid waste generated by the County’s residential, commercial, industrial, institutional, and public sectors during the ten-year

planning period from 2015 through 2024. The Plan establishes the framework for which current solid waste management activities are conducted and future programs will be implemented. This Plan reflects the previously established integrated solid waste management system adopted and implemented by the County. The Plan sets out the manner in which solid waste generated within the County will be managed during the next ten years.

## **2. Goals, Objectives and Policies for Solid Waste Management**

The Harford County Department of Public Works, Division of Environmental Services is responsible for the management of solid waste and recycling in the County. The County is committed to provide a safe, environmentally sound, economically sound, integrated solid waste program that will:

1. Promote waste prevention and undertake waste reduction measures to the extent practical and feasible.
2. Implement waste recycling measures that are practical with available and locally-proven technologies and markets under a zero-cost model whereby market sales fully support program expenses. Technologies, markets and cost-effectiveness should be reviewed periodically to evaluate expansion of the recycling program with the diversion of new waste materials as new cost-effective opportunities arise in the future. Likewise recycling opportunities will be explored if they result in lower costs than traditional disposal methods.
3. Utilize sustainable waste disposal practices and facilities, when practical and economically feasible.
4. Significantly decrease the quantity of solid waste deposited within County landfill facilities when practical and economically feasible.

### **3. Integrated Solid Waste Management System**

The County has adopted an integrated solid waste management system to achieve its goal of reducing and recycling solid waste to the maximum feasible extent. To achieve this goal, the County has adopted a policy that establishes a hierarchy of solid waste management options. The most preferred option is the reduction of solid waste at its source. The second most preferred technique is recycling and reuse of solid waste. The option with the third highest priority is utilization of regional approaches for safe and sustainable waste disposal. The least preferred method of managing solid waste is to utilize County landfill facilities. This hierarchy recognizes the interdependence of all elements of an integrated solid waste management system.

In order to maximize county recycling by making it more convenient, the County initiated a single stream recycling program in 2010. Since inception, this program has increased curbside recycling by over 40 percent. The County has also promoted the purchase of recycled products. Pursuant to Environment Article §9-1703 (b) (12) of the Annotated Code of Maryland, the County has begun implementing a plan for mandatory recycling at apartments and condominiums containing 10 or more dwelling units which will begin on October 1, 2014. The plan includes an outreach program to educate, promote, and further enhance the County's recycling efforts.

The Maryland Recycling Act (MRA) of 1988 set a recycling goal of 20 percent for counties with populations over 150,000 residents. This recycling goal was revised by the Maryland General Assembly in the 2012 legislative session by House Bill 929 (HB929, "Recycling Rate and Waste Diversion – Statewide Goals Act") to 35%, effective October 1, 2012 and to be fully implemented by December 31, 2015. The County's solid waste management programs and policies have created a system that has consistently far exceeded these new goals. The County's solid waste management hierarchy is fully consistent with the State's solid waste management hierarchy. By shifting the focus of

solid waste management to reduction and recycling, the County strives to reduce the solid waste remaining for disposal. This assists the County by reducing its reliance on landfilling within County landfills.

#### **4. Conformance with Land Use Plans**

The solid waste management goals and objectives are consistent with the land uses stated in the County's Master Land Use Plan. The current solid waste facilities are in conformance with all applicable land uses. Future solid waste management facilities will be developed in accordance with the County's zoning and land use regulations, and will be consistent with the goals and objectives of the State, regional, and local Planning and Zoning agencies. The certification from the Harford County Director of Planning and Zoning is provided in Appendix 18.

#### **5. County Government Structure**

Harford County is a charter county of Maryland with an elected County Executive and an elected seven member County Council. The County Council enacts all County laws, the annual operating and capital budgets. It also performs all legislative functions, and sits as the County Board of Health and Board of Zoning Appeals. The County Executive establishes all executive branch policies, prepares and submits to the County Council an annual budget, appoints department heads, boards and commissions, serves as the County's Chief Executive, and is responsible for the operation of the executive branch of County Government.

The County agencies that are involved with solid waste management issues include the Department of Public Works, Division of Environmental Services and the Division of Water and Sewer; and the Department of Planning and Zoning.

The Department of Public Works, Division of Environmental Services is responsible for

implementing the County's solid waste management and recycling programs. Responsibilities include (1) the design, construction, inspection, operation, maintenance, and monitoring of all County-owned solid waste management facilities and equipment; (2) the coordination, development, and implementation of the Harford County Solid Waste Management Plan; (3) ensuring the County meets or exceeds the waste reduction and recycling goals as established by State laws; (4) implementation and coordination of the work associated with the Harford County Debris Management Plan in the event of a declared natural or manmade disaster; and (5) enforcement of applicable sections of §109 Environmental Control of the Harford County Code in addition to Section §157-28 Solid Waste Fees.

The Department of Public Works, Division of Water and Sewer is responsible for implementing the Harford County Master Water and Sewer Plan and for providing public water and sewer service within the Harford County Water and Sewer service areas. The Division of Water and Sewer coordinates with the Division of Environmental Services in siting solid waste disposal facilities to ensure the protection of public drinking water sources. This Division also coordinates with the Division of Environmental Services regarding matters related to the disposal of wastewater and water treatment plant residuals.

The Department of Planning and Zoning responsibilities relative to solid waste include (1) coordinating with the Department of Public Works on the development and implementation of the Solid Waste Management Plan, and land use criteria related to solid waste facilities; (2) determining the compatibility of land uses for proposed solid waste facilities; and (3) providing information concerning Chesapeake Bay Critical Area requirements, the Harford County Natural Resource District, and drinking water/groundwater resources and how they all govern the siting of solid waste management facilities.

Appendices 1 and 2 depict the relevant organizational charts for Harford County

Government.

## **6. Federal, State, and Local Laws and Regulations**

Solid waste management laws and regulations exist at the Federal, State, and County levels. Overall regulatory direction and minimum nationwide standards for protecting human health and the environment are established at the Federal level. State regulations meet or exceed those mandated by Federal regulations. State regulations specify minimum design criteria and the permitting, construction, operation, maintenance, and monitoring requirements for many solid waste management facilities. County regulations must be compatible with Federal and State laws and regulations, but may augment Federal and State laws and regulations. The more specific issues of land use, zoning, procurement, and financing related to solid waste management facilities are left entirely to the County to regulate.

Descriptions of responsible agencies, responsibilities, and the applicable Federal, State, and County laws and regulations are discussed below.

### **6.1 Federal**

#### ***6.1.1 Federal Statutes Affecting Solid Waste Management***

While it is not feasible to describe all Federal laws that affect solid waste management, the following paragraphs summarize those that are judged to be most significant.

Resource Conservation and Recovery Act: A primary objective of this act is to promote recycling and reuse of recoverable materials in solid wastes, and/or conversion of wastes to energy. The act also provides standards and guidelines for the environmentally sound handling and disposal of both hazardous and non-hazardous solid waste. Subtitle D

specifies criteria for municipal solid waste landfills.

Comprehensive Environmental Response, Compensation and Liability Act (Superfund):

This act establishes a program for the identification and remediation of waste disposal sites containing hazardous substances, establishes standards for clean-up efforts and disposal of wastes, and provides a mechanism for assigning liability for environmental contamination.

Clean Water Act: Section 402 of this act establishes the National Pollutant Discharge Elimination System (NPDES) program which regulates effluent limitations for the discharge of wastewater and runoff from solid waste management facilities into bodies of water. The construction of facilities which may impact rivers, lakes, marshes, swamps or wetlands is regulated by Section 404 which is administered by the Army Corps of Engineers. Section 405 addresses the disposal of wastewater treatment sludges.

Clean Air Act: Regulates emissions from landfill gas management systems and resource recovery facilities. Landfill operators must comply with requirements of the State implementation plan established under Section 110.

Safe Drinking Water Act: Establishes maximum contaminant levels for parameters included in groundwater monitoring programs.

Federal Emergency Management Act: Prohibits siting of facilities within the 100-year floodplain.

Endangered Species Act: Prohibits construction or operation of facilities that will result in the “taking” of an endangered or threatened species, or in the destruction of their critical habitat.

***6.1.2 Federal Regulations Affecting Solid Waste Management***

Foremost among the laws is the Resource Conservation and Recovery Act (RCRA) of 1976 (amended in 1980 and 1984) which provides Federal guidelines and standards for the environmentally sound reuse, handling and disposal of solid waste. The act requires that states incorporate these guidelines into their solid waste management programs. Under RCRA provisions, Subtitle D provides Federal standards for municipal sanitary landfills. These standards include the location, design, operation, groundwater monitoring, corrective action, closure, post-closure and financial assurance criteria for all municipal sanitary landfills.

The Code of Federal Regulations (CFR) contains the rules established in the Federal Register by the executive departments of the Federal Government. Federal regulations establish overall regulatory direction and minimum nationwide standards for protecting human health and the environment. The code is divided into fifty titles which are further divided into chapters and subparts thereof. Title 40 of the CFR is entitled Protection of the Environment and includes Subchapter I Solid Wastes (40 CFR Parts 240 through 272).

Solid waste management on the Federal level is the responsibility of the U. S. Environmental Protection Agency (EPA). Direct implementation of solid waste programs is delegated to State and local governments. A summary of Federal regulations important to solid waste management contained in 40 CFR, Chapter I, Subchapter I - Solid Wastes follows.

Part 240: Guidelines for the Thermal Processing of Solid Wastes

Part 241: Guidelines for the Land Disposal of Solid Wastes

- Part 243: Guidelines for the Storage and Collection of Residential, Commercial and Institutional Solid Waste
- Part 244: Solid Waste Management Guidelines for Beverage Containers
- Part 245: Promulgation of Resource Recovery Facilities Guideline
- Part 246: Source Separation for Materials Recovery Guidelines
- Part 247: Guidelines for the Procurement of Products that Contain Recycled Materials
- Part 255: Identification of Regions and Agencies for Solid Waste Management
- Part 256: Guidelines for Development and Implementation of State Solid Waste Management Plans
- Part 257: Criteria for the Classification of Solid Waste Disposal Facilities and Practices
- Part 258: Criteria for Municipal Solid Waste Landfills (Subtitle D Regulations)
- Part 261: Identification and Listing of Hazardous Waste
- Part 262: Standards Applicable to Generators of Hazardous Waste
- Part 263: Standards Applicable to Transporters of Hazardous Waste
- Part 264: Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities
- Part 265: Interim Status Standards for Owners and Operators of Hazardous Waste Treatment and Disposal Facilities
- Part 266: Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Disposal Sites
- Part 267: Interim Standards for Owners and Operators of New Hazardous Waste Land Disposal Facilities
- Part 268: Land Disposal Restrictions
- Part 270: EPA Administered Permit Programs
- Part 271: Requirements for Authorization of State Hazardous Waste Programs

- Part 272:      Approved State Hazardous Waste Programs
- Part 503:      Standards for the Use or Disposal of Sewage Sludge
- Part 763:      Asbestos

## **6.2    State**

### ***6.2.1 Maryland Laws Affecting Solid Waste Management***

The primary State agency overseeing solid waste management is the Maryland Department of Environment (MDE). MDE's Land Management Administration is responsible for regulating solid waste management and recycling efforts. Some of the state laws affecting solid waste management include the following:

Chesapeake Bay Critical Area Protection Program (1984): Controls human intervention in the Bay area.

Composting Act (1992): Includes composting in the definition of recycling. Requires that county recycling plans address composting issues, and bans loads of yard materials collected separately from trash from being landfilled effective in 1994.

Electronics Recycling Program (2007): Mandates that manufacturers of certain electronic devices (computers, televisions, etc.) contribute payments toward a fund for local government electronics recycling programs or that such manufacturers establish their own electronics recycling collection programs. Authorizes counties to address the subject of electronics recycling in their recycling plans.

Land-Clearing Debris Landfills – Amount of Security (1990): Addresses the value of bonds required as security for each acre of land-clearing debris landfills.

Maryland Air Quality Control Act (1989): Allows adoption of rules for air pollution control, sets emission standards and air quality control areas, and requires training for municipal solid waste incinerator operators.

Maryland Environmental Service Act (1970): Creates the Maryland Environmental Service to manage service regions that were created to deal with issues affecting the state's water supply, wastewater purification, and solid waste management.

Maryland Landfill Financial Assurance Law (1997): Sets forth financial assurance requirements for landfills in conformance with the requirements of federal regulations.

Maryland Landfill Siting Law (1994): Describes the requirements for public hearings regarding landfill siting, and addresses permitting requirements and security requirements. Explains the requirements for submission of plans and documents necessary to conduct a technical review and to approve proposed facilities.

Maryland Recycling Act (1988): Requires that by 1994 each jurisdiction with a population greater than 150,000 reduce its solid waste stream by at least 20% through recycling (15% for jurisdictions with lesser populations). The recycling rate calculation includes both residential and commercial waste and recycling tonnages.

Maryland Senate Joint Resolution 6 (2000): Sets a voluntary statewide goal of 40% waste diversion by 2005, with a credit of up to 5% for jurisdictions engaged in specified waste prevention activities. "Waste diversion" is defined as recycling rate plus waste prevention credit. Mandatory recycling rates established by the Maryland Recycling Act of 1988 remain in effect.

Maryland State Implementation Plan (SIP) (Ongoing): Limits emissions from specific pollutant sources to prevent air quality from falling below National Ambient Air Quality Standards (NAAQS).

Maryland Nonpoint Source Pollution Control Laws (1990-1994): Allows for the adoption of criteria and procedures by counties and soil conservation districts to implement soil erosion control programs and for counties and municipalities to implement stormwater management programs.

Maryland Used Oil Recycling Act (1997): Requires MDE to develop programs to educate the public on oil recycling and to designate used oil collection facilities. It also prohibits disposal of used oil into sewers, drainage systems, or natural waters.

Maryland Wastewater Treatment Law (1987): Requires permits prior to installing, altering, or extending a water supply system or refuse disposal system (including a landfill, waste transfer station, incinerator, or other waste processing facility).

Medical Waste Legislation (1988): Regulates identification, record keeping, treatment, transport and disposal of special medical wastes. Prohibits infectious wastes in solid waste; and in solid waste landfills in the state.

Mercury Oxide Battery Act (1992): Makes mercury oxide battery manufacturers responsible for collection, transportation and recycling or disposal of batteries sold or offered for promotional purposes in the state.

Natural Wood Waste Recycling Act (1991): Establishes the requirements for wood waste recycling in Maryland, authorizes the Department of the Environment to adopt additional regulations governing recycling facilities, and requires a permit for operation of wood waste facilities created after July 1, 1992.

Newsprint Recycled Content Act (1991): Regulates newsprint recycling by imposing specified recycling content percentage requirements on the Maryland newspaper industry.

Amended in 2006 to measure compliance based on a rolling three-year average.

Nickel Cadmium (NICD) Battery Act (1995): Regulates the storage, transportation, and destination of nickel-cadmium batteries.

Nontidal Wetland Regulations (1990): Prevents net loss of nontidal wetlands by establishing a stringent permitting process.

Northeast Maryland Waste Disposal Authority (1980): Creates and establishes the powers of the Northeast Maryland Waste Disposal Authority.

Plastic Material Code (1991): Regulates that rigid plastic containers or bottles may not be distributed for sale in the state unless appropriately labeled indicating the plastic resin used to produce them.

Scrap Tire Law (1992): Prohibits the disposal of scrap tires in landfills after January 1, 1994, and creates a licensing system for the management of scrap tires. Establishes requirements for implementing a scrap tire recycling system, licensing haulers and collection facilities. Establishes Tire Clean-Up and Recycling Fund.

Sludge Application (1993): Regulates land application procedures for sludges to maintain the public health.

Telephone Directory Recycling Act (1991): Requires telephone directory publishers to meet specified recycling content percentage requirements for telephone directories.

Public School Plans (2009): An Act requiring a county recycling plan to address the strategy for the collection, processing, marketing, and disposition of recyclable materials from county public schools.

Fluorescent and Compact Fluorescent Light Recycling (2010): An Act requiring a county recycling plan to address the strategy for the collection and recycling of fluorescent and compact fluorescent lights that contain mercury.

Recycling – Apartment Buildings and Condominiums (2012): An Act requiring a county recycling plan to address the collection and recycling of recyclable materials from residents of apartment buildings and condominiums that contain 10 or more dwelling units by property owners or managers of apartment buildings and councils of units owners of condominiums. Also, if applicable, a method for implementing a reporting requirement for recyclable materials generated at apartment buildings and condominiums that contain 10 or more dwelling units.

Recycling Rates and Waste Diversion – Statewide Goals (2012): An Act revising the 1988 MRA. Requiring a county Plan to address a reduction through recycling of at least 20% or 35%, by population, of the county's solid waste stream by December 31, 2015.

Environment – Recycling – Special Events (2014): An Act requiring a county recycling plan to address the collection and recycling of recyclable materials from special events by October 1, 2015.

Water and Sewage Plan Act (1983): Requires the preparation and submission of solid waste management plans by counties and establishes the minimum requirements of such plans.

Article 9 – Environment Article, Annotated Code of Maryland: This statute contains MDE’s authority for the regulation of solid waste.

Title 4: Water Management

Title 6: Toxic, Carcinogenic and Flammable Substances

Title 7: Hazardous Materials and Substances

Title 9: Water, Ice, and Sanitary Facilities

Subtitle 5: County Water and Sewerage Plans

Subtitle 17: Office of Recycling (created MDE’s Recycling Program and defined and mandated county recycling goals)

Section 204: Installing, Altering or Extending Water Supply Systems,  
Sewerage Systems or Refuse Disposal Systems

204.1: Installing, Altering or Extending Incinerators

204.2: Installing, Altering or Extending Landfill Systems

Section 209: Landfill System Hearings

Section 210: Prerequisites for Issuance of Permit

Section 211: Landfills, Incinerators and Transfer Stations; Requirements  
for Security

Section 212: Landfill Systems – Options to Purchase

212.1: Denial of Permit to Nongovernment Person

Section 213: Term of Permit (5 Years)

Section 214: Revoking or Refusal to Renew a Permit

Section 215: Closure and Cover when Operation Ends

Section 225: Landfills Near Hospitals Prohibited (1/2-Mile Radius)

Section 226: Certification of Public Necessity Required for Hazardous  
Waste Landfill System

Section 227: Infectious Waste in Landfill System Prohibited

Section 228: Scrap Tires – Storage, Recycling and Disposal

### ***6.2.2 Maryland Regulations Affecting Solid Waste Management***

The principal State of Maryland regulations pertaining to solid waste management are found in the Code of Maryland Regulations (COMAR). Pertinent regulations include Title 26 Department of the Environment; Subtitle 04 Regulation of Water Supply, Sewage Disposal, and Solid Waste (COMAR 26.04.07), as well as some of the following regulations:

#### **Title 26**

Subtitle 1: General Provisions

Subtitle 2: Occupational, Industrial, and Residential Hazards

Chapter 3: Control of Noise Pollution

Subtitle 3: Water Supply, Sewerage, Solid Waste and Pollution Control Planning and Funding

Chapter 3: Development of County Comprehensive Solid Waste Management Plans

Chapter 8: Water Pollution Control Fund Construction Financial

Chapter 10: Financial Assistance for the Constructing of Solid Waste Processing and Disposal Facilities

Chapter 11: Environmental Review Procedures for Facilities Receiving Financial Assistance from the Maryland Water Quality Financing Administration

Subtitle 4: Water Supply, Sewage Disposal, and Solid Waste

Chapter 4: Well Construction

Chapter 6: Sewage Sludge Management

Chapter 7: Solid Waste Management

Chapter 8: Storage, Collection, Transferring, Hauling, Recycling, and Processing of Scrap Tires

Chapter 9: Natural Wood Waste Recycling Facilities

Subtitle 8: Water Pollution

Subtitle 10: Oil Pollution and Tank Management

Chapter 13: Oil-Contaminated Soil

Chapter 15: Management of Used Oil

Subtitle 11: Air Quality

Chapter 3: Permits, Approvals, and Registration- Title V Permits

Chapter 7: Open Fires

Chapter 8: Control of Incinerators

Chapter 9: Control of Fuel Burning Equipment, Stationary, Internal  
Combustion Engines, and Certain Fuel-Burning Installations

Chapter 15: Toxic Air Pollutants

Chapter 17: Requirements for Major New Sources and Modifications

Subtitle 13: Disposal of Controlled Hazardous Substances

Chapter 1: Hazardous Waste Management System: General

Chapter 2: Identification and Listing of Hazardous Waste

Chapter 3: Standards Applicable to Generators of Hazardous Waste

Chapter 4: Standards Applicable To Transporters of Hazardous Waste

Chapter 5: Standards For Owners and Operators of Hazardous Waste  
Treatment, Storage, and Disposal Facilities

Chapter 6: Interim Status Standards for Owners and Operators of  
Hazardous Waste Treatment, Storage, and Disposal Facilities

Chapter 7: Permits for CHS Facilities

Chapter 8: Rights of Condemnation

Chapter 10: Standards for the Management of Specific Hazardous Waste  
and Specific Types of Hazardous Waste Management  
Facilities

Chapter 11: Special Medical Wastes

Chapter 12: Standards Applicable to Generators of Special Medical Waste

Chapter 13: Standards Applicable to Transporters of Special Medical  
Waste

- Subtitle 14: Hazardous Substances Response Plan
  - Chapter 1: Procedures for Hazardous Substance Response
  - Chapter 2: Investigating, Evaluating, and Responding to Hazardous Substance Releases
- Subtitle 15: Disposal of Controlled Hazardous Substances-Radio Hazardous Substances
- Subtitle 17: Water Management
  - Chapter 1: Erosion and Sediment Control
  - Chapter 2: Stormwater Management
  - Chapter 4: Construction of Nontidal Waters and Floodplains
- Subtitle 20: Surface Coal Mining and Reclamation Under Federally Approved Program
  - Chapter 26: Excess Soil Disposal
  - Chapter 27: Waste Handling
- Subtitle 23: Nontidal Wetlands
- Subtitle 24: Tidal Wetlands

### **6.3 Local**

#### ***6.3.1 Harford County Laws Affecting Solid Waste Management***

Portions of the Harford County Code that affect solid waste management activities include, but are not limited to:

- Chapter 109: Environmental Control
- Chapter 157: Licenses and Permits
- Chapter 169: Master Plan
- Chapter 214: Sediment Control and Stormwater Management
- Chapter 267: Zoning Code

***6.3.2 Harford County Regulations Affecting Solid Waste Management***

Harford County regulations that affect solid waste management activities include, but are not limited to:

- Harford County Solid Waste Management Rules and Regulations
- Harford County Road Code

**CHAPTER II**

**POPULATION, EMPLOYMENT,  
AND LAND USE**

## **POPULATION, EMPLOYMENT, AND LAND USE**

This chapter presents a description of Harford County, its residents, its work force and major employment sectors, and its land use practices. These factors assist in developing solid waste projections and planning for the future needs of the solid waste and recycling programs in the 10 year planning period. Land use practices and conditions can also influence solid waste planning in that land use patterns may place constraints on the location of future solid waste and recycling facilities.

### **1. General**

Harford County is located in the northeastern area of the State of Maryland. As shown in Appendix 3, it is bordered on the north by the Commonwealth of Pennsylvania; on the east by the Susquehanna River and Cecil County; on the south by the upper reaches of the Chesapeake Bay, and on the west by the Little Gunpowder Falls and Baltimore County. The total land area of the County is approximately 480 square miles.

The County is traversed by thirteen major highways: Interstate 95, MD Route 7, U.S. Route 1, U.S. Route 40, and Maryland Routes 22, 23, 24, 152, 136, 155, 165, 543, and 924. It is located between the urban centers of Philadelphia and Wilmington to the north and Baltimore and Washington, D.C., to the south.

Development of the County initially occurred along Old Philadelphia Road (Maryland Route 7). A major Federal installation, the Aberdeen Proving Ground with facilities at both Aberdeen and Edgewood, spurred development in the southern portion of the County. Since 1977, the County has directed new development to occur within a designated growth area, otherwise known as the Development Envelope which is generally defined as the areas south of Interstate 95 and along the Maryland Route 24/924 corridor north to Maryland Route 23. Appendix 4 presents the 2012 Harford County Land Use Map.

## **2. Population**

The U.S. Bureau of the Census reported that in 2010 Harford County had a population of 244,826, which includes the incorporated municipalities. This represents an increase of 12 percent over the 2000 Census population of 218,590. The Harford County Department of Planning and Zoning develops population projections based on the Census data which are provided in Appendix 5.

## **3. Municipalities**

There are three incorporated municipalities within Harford County, including the Town of Bel Air, the City of Aberdeen and the City of Havre de Grace.

According to the 2010 Census, the Town of Bel Air had a population of 10,120 (or 4.1 percent of the 2010 County population), the City of Aberdeen had a population of 14,959 (or 6.1 percent of the 2010 County population), and the City of Havre de Grace had a population of 12,952 (or 5.3 percent of the 2010 County population). The Town of Bel Air serves as the County seat.

## **4. Employment**

The Maryland Department of Planning maintains historical figures and develops forecasts for employment projections for each County. This data indicates 115,639 were employed within the County in 2010 which is an increase of approximately 21 percent from that in 2001. The Harford County forecasts, as developed by the Maryland Department of Planning, are also provided in Appendix 6.

Harford County is home to a major Federal facility, the Aberdeen Proving Ground (APG), which is controlled and operated by the Department of the Army. The 72,516 acre facility is located in southeastern Harford County. APG is physically divided into two areas by the Bush River; these areas are known as the Aberdeen Area and the Edgewood Area. The APG is the largest employer (military and civilian) in Harford County representing over 28 percent of the total employment in

the County.

Other significant employment sectors within the County include retail trade (13%), health care (10%), State and local Government (8%), professional services (8%), and construction (7%).

## **5. Zoning and Comprehensive Land Use**

Land use policies in the County are implemented through planning and zoning decisions. Land use policies directly affect solid waste generation and management in terms of the quantity and type of waste expected to be generated as well as the decision on which properties may have solid waste management facilities placed upon them. This plan shall not be used to create or enforce local land use and zoning requirements.

As noted in Chapter I of this Plan, the County's solid waste management goals and objectives conform to State and County land use plans by planning for the quantity of waste which must be received and disposed of. Waste reduction and recycling reduce the County's need to identify land for new landfills or other solid waste disposal facilities. The use of an out-of-County or out-of-State disposal facility also supports the County's land use plans.

The Harford County Master Plan, combined with the Land Use Element Plan, is the core document upon which individual Element Plans are developed. The Solid Waste Management Plan is one of these Element Plans. All of these Plans provide direction for addressing future growth, revitalization, the provision of adequate public facilities, economic development and the preservation and protection of natural resources, agricultural lands and historic resources. They also incorporate the bills passed by the Maryland General Assembly in 2009. These bills established 12 new "Visions" and are collectively called Smart, Green, and Growing. The latest Master Plan was adopted in 2012.

### **5.1 Zoning Requirements Affecting Solid Waste Management Facilities**

The placement of solid waste management facilities within Harford County is regulated by Section §267, Zoning, of the Harford County Code. Specifically, Sections § 267-89 through §267-92 refer to solid waste management facilities and contain the zoning district requirements and other conditions on developing new solid waste management facilities. A copy of this information is presented in Appendix 7.

## **6. Subsidiary Plans**

Section 26.03.03.02B of COMAR requires that each solid waste management plan include all or part of the subsidiary plans of the towns, municipal corporations, sanitary districts, privately owned facilities and local, State, and Federal agencies having existing, planned, or programmed development with the County to the extent these inclusions promote public health, safety and welfare. Although repeated attempts were made, no subsidiary solid waste management plans have been received by the County for inclusion into this Plan.

**CHAPTER III**

**SOLID WASTE GENERATION,  
COLLECTION, AND  
ACCEPTANCE SYSTEMS**

## **SOLID WASTE GENERATION, COLLECTION, AND ACCEPTANCE SYSTEMS**

This chapter addresses all of the solid waste categories contained in COMAR 26.03.03.03D. Data is provided with the existing and projected annual generation of each waste category. This section also addresses the collection methods and solid waste acceptance facilities that are available to manage each solid waste category. This analysis of the County's existing solid waste management system serves as the basis for the needs assessment and action plan presented in subsequent chapters.

### **1. Solid Waste Generation**

#### **1.1 Introduction**

Section 26.03.03.03.D of COMAR requires that this Plan identify the existing and ten-year projected annual quantities of solid waste generated within the County for the following waste categories:

- Residential wastes
- Commercial wastes
- Non-hazardous industrial wastes
- Institutional wastes
- Land-clearing and demolition debris (rubble)
- Controlled hazardous substances (CHS)

- Dead animals
- Bulky wastes
- Vehicle tires
- Wastewater treatment plant sludges
- Septage
- Other wastes, including water treatment plant sludge, residues collected by water pollution control devices, agricultural wastes, mining waters, litter, street sweepings, recreational wastes, etc. (unless generated in insignificant quantities)

A description of the basis for the waste generation data and predictions is also required. The data, assumptions and analyses for existing and projected waste generation in Harford County are presented in the following sections. For the purposes of this Plan, the Maryland Department of the Environment is requiring the baseline to include calendar year 2012 data.

## **1.2 Residential Waste**

For the purpose of this Plan, residential waste includes all wastes generated by households in Harford County, except for dead animals, bulky wastes (i.e., automobiles and appliances) and vehicle tires, which are described separately in subsequent sections.

Residential waste in Harford County is delivered to the Harford Waste Disposal Center (HWDC) or the Harford Waste-to-Energy Facility (HWTEF). Annual landfill and HWTEF reports, which summarize quantities and types of waste delivered to each facility were reviewed to determine the quantities of residential waste delivered.

Waste delivered directly to the landfill at the HWDC by private refuse haulers is designated as either “commercial” or “household.” This designation is based on the type of collection vehicles. Most rear-loading trash trucks cater to single family residential curbside pick-up; while front-loading trash trucks cater to businesses with dumpsters as well as apartments, condominiums, and some townhome communities. Commercial waste is waste collected from private businesses, including industry and institutional generators. Household waste is waste collected from residential sources.

Another category of residential waste entering the landfill is from "private vehicles." Private cars, pickups, and pull-behind trailers use the landfill as a homeowner convenience center. Residents dump into one of five 50 cubic yard roll-off containers at the homeowner drop-off area. These containers are hauled from the drop-off area to the active landfill by county personnel and emptied.

Residential waste delivered to the HWTEF is hauled only by licensed refuse haulers. Residential self-haulers are not permitted to deliver waste to the HWTEF. Waste delivered to the HWTEF by private refuse haulers is also described as household or commercial.

### **1.3 Commercial Waste (Commercial, Nonhazardous Industrial and Institutional Wastes)**

Commercial, nonhazardous industrial and institutional wastes delivered to the landfill and HWTEF by licensed refuse haulers are not recorded individually by the County, but are reported under a single category as commercial waste. Thus, for the purpose of this Plan, commercial waste includes waste generated by private businesses and institutions (including government) and nonhazardous waste generated by industry. Waste generated by the APG is also considered commercial waste. Commercial waste quantities do not include rubble, dead animals, bulky wastes or vehicle tires.

#### **1.4 Land Clearing and Construction and Demolition Debris (C&D)**

Land clearing and construction and demolition (C&D) debris (also known as rubble) include stumps, woody vegetation, rock, soil, masonry, asphalt, brick, glass, plastics, mortar, wood lumber, paper, and metals. Land clearing and C&D debris generated in Harford County is currently disposed of in privately owned and operated rubble landfills outside of the County. Harford County policy does not permit commercial rubble to be accepted at the HWDC or the HWTEF. In order to conserve HWDC landfill space, very limited quantities of residential C&D is allowed at the HWDC, up to 25 percent of a vehicle's load. Currently, there are no private facilities within the County licensed to accept this material for disposal.

#### **1.5 Controlled Hazardous Substances Including Special Medical Wastes**

Under Maryland regulations, the term Controlled Hazardous Substance (CHS) is used synonymously with the term hazardous waste. Section 26.13.02.03 of COMAR provides specific definition of hazardous waste and is referenced herein as it is voluminous... However, for the purpose of this discussion, the Annotated Code of Maryland generally defines a hazardous substance as any substance that conveys toxic, lethal or other injurious effects, causes sublethal alterations to plants, animal or aquatic life, or may be injurious to humans.

Special Medical Waste (SMW) is classified as a CHS by MDE, and is defined in Section 26.13.11.02.B(11) of COMAR as a solid waste that is composed of anatomical material, blood, blood-soiled articles, contaminated material, microbiological laboratory wastes, or sharps (i.e., syringes, needles, surgical instruments, etc.) and otherwise not excluded under Section 26.13.11.03 of COMAR. SMW's are typically generated by hospitals and clinics, nursing facilities, doctor and dentist offices and veterinary clinics. SMW's do not include household wastes, ash from authorized medical waste incinerators, or wastes from animals not suspected of carrying diseases infectious to humans.

CHS are not permitted to be disposed of in a municipal landfill, but must be handled, stored,

collected, transported, processed and/or disposed of in specific ways according to stringent State and Federal regulations and guidelines. The MDE tracks the generation of CHS and maintains a data base using shipping manifests for CHS. The database includes a listing of CHS generators and corresponding types and volumes of CHS reported. It should be noted that, from a regulatory perspective, household hazardous wastes (HHW) are not the same as CHS. HHW are hazardous wastes that are generated in small quantities by residential users, whereas CHS are produced in larger quantities by businesses, industry and institutions. Examples of HHW materials include oil-based paint, solvents, fuel, caustic cleansers, acid, mercury containing items such as thermometers and thermostats, pool chemicals, herbicides, pesticides, and other materials which may cause harm if not safely handled or applied. It is permissible, under current State and Federal regulations, to dispose of many types of HHW in a municipal sanitary landfill. Although this is allowed, Harford County typically holds a bi-annual HHW collection day, available to all County residents.

The existing collection and disposal system for CHS and SMW is strictly controlled by MDE regulations. CHS wastes are collected by private haulers and taken out of the County to treatment facilities or hazardous waste disposal sites. Manifests required to accompany waste shipments must be signed and verified by the generator, transporter, and disposal or treatment facility.

The management of CHS and SMW is not under the jurisdiction of Harford County and therefore this information will not be addressed in this Plan.

## **1.6 Dead Animals**

For the purposes of this Plan, dead animals include animals that have been hit and killed by a vehicle and left by the side of the road. These dead animals are collected by the State Highway Administration as well as the Harford County Road Crews and disposed of at the HWDC landfill.

## **1.7 Bulky Wastes**

Bulky wastes include large household appliances (white goods) and large scrap metal items. The

County accepts scrap metal at the HWDC. County residents and businesses may recycle white goods, swing sets, metal furniture, bicycles, lawn mowers and tractors, air conditioners, and other metal scrap. White goods delivered to HWDC by residents and private haulers are segregated for refrigerant removal, compacted and stored for pick-up by a contractor. The contractor then transports these items to a metal processor. White goods and other bulky wastes delivered to the HWTEF are separated from the incoming waste stream and sent to HWDC for disposal or recycling.

### **1.8 Scrap Tires**

Scrap tires are defined in COMAR 26.04.08.02 (17). Information was obtained from the MDE scrap tire program on the quantity of scrap tires received at licensed scrap tire acceptance and recycling facilities with Harford County. Residents may dispose of scrap tires at the HWDC. Commercial establishments may dispose of scrap tires with any of the privately-owned licensed scrap tire haulers or acceptance facilities.

### **1.9 Septage and Wastewater Treatment Biosolids**

Septage is the liquid and solid material pumped or removed from chemical toilets, septic tanks, seepage pits, and privies, cesspools, holding tanks or other facilities that receive sewage. Both MDE and Harford County require that septage be collected and treated as raw sewage at a permitted wastewater treatment plant (WWTP). Sewage sludge is the semi-liquid residue that remains after municipal or industrial sewage sludge and/or wastewater is treated at a WWTP.

According to County records, in 2012, 17.5 million gallons of septage were received and treated by the County's Sod Run WWTP. This represents the total quantity of septage generated in the County during that year. Appendix 9 presents existing and projected quantities of septage.

Biosolids are a by-product of wastewater treatment, and its handling and disposal are regulated by MDE. Wastewater treatment residuals generated at the Sod Run wastewater treatment plant are

treated on-site in the solids treatment train. In addition, treatment residuals from the Joppatowne WWTP and a portion of the residuals from the Abingdon Water Treatment Plant are conveyed to Sod Run through the sanitary sewer system. Treatment residuals from several small waste water treatment facilities within the County including the County's Spring Meadows WWTP, and several package treatment plants are hauled to Sod Run in liquid form and are discharged into the septage receiving facility from which it is fed into the headworks of the plant.

Treatment of the sewage sludge at Sod Run consists of thickening, thermophilic anaerobic digestion (stabilization), dewatering and air drying which generates Class B biosolids. The biosolids from Sod Run are recycled to agricultural fields under a sludge utilization permit. On a very infrequent basis, when land application is not an available option, biosolids are hauled and disposed at an out-of-State landfill. Land fill disposal is expected to increase significantly as regulations aimed at limiting nutrients on agricultural land are phased in over the next several years.

The City of Aberdeen's biosolids are composted at the Aberdeen composting facility. The City of Havre De Grace disposes of its sewage sludge by either composting it which in turn is sold in bulk quantities or hauled to Modern Landfill in York, Pennsylvania for disposal. Appendix 9 presents existing and projected quantities of Wastewater Treatment biosolids.

### **1.10 Water Treatment Plant Residuals**

Water treatment systems that use surface water as their source (i.e., streams, rivers, reservoirs, etc.) produce residuals or sludge as a waste by-product of the treatment process due to the removal of suspended solids in the surface waters. Five surface water treatment systems are currently operated in Harford County which include the Abingdon WTP, Havre De Grace WTP owned and operated by Harford County, the APG - Chapel Hill WTP owned and operated by the City of Aberdeen; and the Havre De Grace WTP owned and operated by the City of Havre De Grace, the Van Bibber WTP owned and operated by the U.S. Army – Edgewood Area APG, and the Winters Run WTP owned and operated by the Maryland American Water Company. Appendix 9 presents existing

and projected quantities of water treatment plant residuals.

Residuals generated at the Abingdon WTP are thickened and discharged to the County sewer system where it is conveyed to Sod Run WWTP and removed along with other wastewater solids. Two on-site lagoons are used to provide temporary operational storage for backwashes, and draining of tanks. The lagoons are periodically drained and the solids are removed as a liquid where it is hauled and recycled on agricultural fields.

Residuals generated at the County's and City of Havre de Grace WTPs in Havre de Grace are processed and dewatered on site and subsequently hauled to and applied on agricultural fields. Residuals at the Aberdeen facilities are composted with biosolids.

### **1.11 Used Oil and Antifreeze**

Used motor oil and antifreeze are generated primarily from the operation of motor vehicles by individuals, businesses and institutions. Waste oil and antifreeze are collected for recycling by MES under an Intergovernmental Agreement with Harford County. Under this program, MES maintains 7 remote drop-off sites and picks-up the used materials at those sites as well as the HWDC for recycling. The used oil is sold for industrial boiler fuel, used in hot mix asphalt, or used in cutter stock for oil fuel burners. Certain industries such as pulp and paper mills and electric utilities use the recycled fuel oil. Used oil may also be refined for use again as motor or other lubricating oil. Used antifreeze is recycled to eliminate contaminants, and additives are used to restore its antifreeze qualities. It is then reused as antifreeze. Under the Harford County program, in calendar year 2012 almost 114,000 gallons of used oil was collected and recycled. Additionally, almost 6,000 gallons of used antifreeze was collected and recycled. Used oil and antifreeze is also collected by commercial and institutional vehicle maintenance and repair facilities; the volume of used oil and antifreeze collected by these facilities is not addressed herein.

### **1.12 Stale Gasoline/Oil Mixture**

Stale gasoline/oil mixture, which is used primarily in outboard motors and lawn equipment, is collected from homeowners at HWDC. The material is also collected by MES under the above Intergovernmental Agreement. In calendar year 2012, over 1,400 gallons of material was collected. This gasoline is sold to Reco Biotechnology. The fuel is recycled as a cost effective alternative to destructive disposal technology. In most cases the fuel is returned for use as fuel. This reutilization meets EPA standards for fuel recycling, eliminating the need to manage fuel as off-specification oil fuel, supplemental fuel, or as hazardous waste.

### **1.13 Asbestos**

Asbestos waste is generated from the rehabilitation and demolition of structures containing asbestos materials. Although, the HWDC Refuse Disposal Permit allows disposal of non-friable asbestos within the landfill, county policy is not to bury that waste type in the County landfill. Harford County accepts items containing non-friable asbestos at the HWDC by appointment only. The resident must first double bag the material and secure the bags with duct tape. The material is then loaded into a covered and locked roll-off bin. Once full, the asbestos is transported to the Baltimore County Eastern Sanitary Landfill (ESL), in White Marsh where it is disposed of.

### **1.14 Agricultural Wastes**

Wastes generated by agricultural practices include slash from timber operations, organic residues from crop production, livestock manure and containers from agricultural chemicals. Because most of these wastes (i.e., slash, crop residue and manure) are recycled on-site rather than by disposal at a landfill, agricultural waste generation is not a significant solid waste management issue in Harford County and is not specifically addressed in this plan.

## **1.15 Other Recycling Programs**

### ***1.15.1 Multi-Family Residential Sector***

The Annotated Code of Maryland, Environment Article §9-1703 (b) (12) requires that the property owner or manager of an apartment building that contains 10 or more dwelling units and the council of unit owners for a condominium that contains 10 or more dwelling units (“Responsible Party” or “Responsible Parties”) must provide for the collection and recycling of recyclable materials for their residents. Further direction was provided by the Maryland Department of the Environment on the provisions of this regulation which was required to become effective October 1, 2014. In addition, by October 1, 2012, Harford County was required to develop language describing the apartment building and condominium recycling (“ABCR”) program and incorporate that language into the Harford County recycling plan. This language, described herein, was added to the Plan as an amendment through County Bill No. 13-42 and subsequently approved by MDE.

#### **A. Program Development**

In cooperation with the Responsible Parties, the County has identified 55 apartment buildings and 53 condominiums that fall within the scope of this recycling plan. A list of these properties was compiled in an electronic file and provided to MDE. In October 2012, the county provided notice of recycling requirements to the Responsible Parties. Each Responsible Party was informed that it must develop and maintain a recycling program which meets the following minimum requirements:

- i. At a minimum, the Responsible Parties must provide for the collection and recycling of acceptable items, as identified under the single stream recycling program.
- ii. All containers, labor, and equipment necessary to collect the recyclables must be provided throughout each building by the Responsible Party. . An appropriate quantity of suitably sized containers must be provided to accommodate the quantity of recyclables generated by the residents based upon the frequency of collection.
- iii. Each Responsible Party must collect the recyclables a minimum of once per week and transport them to secondary recycling markets.

- iv. Upon request by the County Office of Recycling, each Responsible Party must submit an annual report to the County detailing the quantity of recyclables removed and the disposition of the material.

**B. Responsibilities**

- i. The Harford County Department of Public Works, Division of Environmental Services is charged with sharing the provisions of this plan with the Responsible Parties.
- ii. In addition to the requirements in Paragraph A, above, each Responsible Party must maintain records of the quantity of recyclables collected and transported for a minimum of 3 years.

**C. Tabulation Of Apartments And Condominiums**

- i. Harford County will maintain a list of apartments and condominiums located within Harford County which contain 10 or more dwelling units. Apartment buildings or condominiums that are identified subsequent to the implementation of this program and that fall under the requirements of this section will be added to the above-described list no later than 6 months after they are identified.
- ii. A copy of the list of apartments and condominiums may be obtained from Harford County's Office of Recycling.

**D. Implementation schedule.**

On October 18, 2012, Harford County distributed a copy of this section of the Harford County recycling plan to each responsible party which stated:

- i. The Responsible Parties were required to develop a written recycling program and communicate the program to their residents on or before March 1, 2014. If requested by the County, each Responsible Party must submit their written program to the county.
- ii. The Responsible Parties were required to provide training or assistance to their residents on the recycling program and inform all residents of the date the recycling program will begin by May 1, 2014.

- iii. The Responsible Parties were required to make arrangements to transport collected recyclables to an acceptable recycling facility by July 1, 2014.

#### **E. Program Monitoring**

The Harford County Department of Public Works, Division of Environmental Services will monitor the progress and performance of the apartment and condominium recycling programs. The County shall have the right to inspect, for compliance, any apartment or condominium building subject to this requirement, including inspecting containers and reviewing records regarding the recycling program. Each Responsible Party is required to perform the tasks necessary to achieve compliance with its recycling program and with state and county law.

#### **F. Program Enforcement**

- i. Any Responsible Party who violates the provisions of section 109-7.2 of the County Code may be subject to the issuance of a citation by the County and a civil penalty not to exceed \$50 per day for each day that a violation continues.
- ii. A person who receives a citation shall, within 30 calendar days after receiving the citation, either pay the fine to the County or appeal the citation in accordance with subsection §109-7.2.e(3)6 of the County Code.
- iii. If the citation is not timely paid or appealed, the County may enforce the fine by an action at law.

#### ***1.15.2 Recycling - Publicly Funded Schools***

The responsibility for planning and implementing public school recycling within Harford County is a cooperative effort between the Harford County Government, Harford County Public Schools (“HCPS,” Kindergarten through Grade 12) and the Harford Community College (“HCC”). As the following description of the school recycling programs demonstrates, both HCPS and HCC have already set examples for putting in place comprehensive recycling strategic plans in their respective

school systems.

**A. Harford County Public Schools**

Harford County Public Schools (HCPS) is comprised of 53 elementary, middle, and high schools, administrative offices, and grounds maintenance facilities. The overall strategic plan in place at HCPS is to focus on a wide variety of recyclables that will be included in HCPS's system-wide recycling program which will significantly increase the amount of recyclable material that would otherwise require disposal. This program applies to all existing and future schools and buildings.

The centerpiece of the system's strategic plan is its single stream recycling program, which was implemented at all of its buildings at the start of the 2009/10 school year. The HCPS Office of Resource Conservation is responsible for the oversight of all HCPS recycling programs including single stream.

Currently (FY 15), recyclables that must be included in the HCPS program consist of, but are not limited to: mixed paper, cardboard, plastics (including plastic bottles and jugs such as water bottles and soft drink bottles, wide-mouth plastic containers and most other plastic items with the recycling symbol #1 through #7), glass food and beverage containers, and metal food and beverage containers. The single stream recycling program allows this full range of recyclables to be disposed of in the same designated receptacles.

The HCPS single stream recycling program is only one part of the system's comprehensive recycling strategic plan. Other materials which are recycled include: computers and electronics, displays and monitors, audio-visual equipment, printers, scanners, and copiers. Additionally, motor oil, antifreeze, batteries, scrap metal, fluorescent lamps and cooking oil are also recycled. The recycling of these materials is done through contracted vendors who manage and collect the materials.

In August 2009, HCPS implemented phase one of its recycling program by purchasing standard recycling containers to be placed in each classroom and work area throughout the school system. In

addition, large recycling collection containers were purchased for the custodial staff to collect recycling materials from classrooms. HCPS is responsible for the purchase and maintenance of all recycling containers. Phase two was implemented in 2011 and addressed recycling in school common areas such as, the cafeteria, theater, cluster or pod areas, and school lobbies. During this phase, large wheeled totter containers were purchased for these areas.

The recyclable material collected at the schools is deposited into front loading containers located at each school by HCPS employees. Currently, (FY 15) the recyclables from the schools are processed and marketed under multi-year contracts with Waste Management Recycle America.

Although not required as a School Recycling Plan condition under the 2009 amended Annotated Code of Maryland, Environmental Article 9-1703, HCPS has teamed up with the Harford County Department of Parks and Recreation to implement recycling collection at all school sports fields and stadiums throughout the county. After a highly successful year-long trial period, the program expanded in 2010 to four additional schools. In the third year, Parks and Recreation purchased four recycling kiosks for additional stadiums. Last year, Harford County Department of Parks and Recreation announced it was expanding the program to all school sites. The public's reception to this program has been very positive.

The recycling program is a component of the HCPS Energy and Resource Conservation policy which is a mandatory program for all schools. Each school has a designated Resource Conservation Administrator (RCA) who is responsible for overseeing policy compliance at the building level. The Resource Conservation Manager for the school system is responsible for working with all RCA's to insure compliance is system wide.

The Resource Conservation Manager conducts inspections, reviews service levels, investigates reported or unreported pick-up and disposal complaints, meets with HCPS staff and contractors to educate or review practices, and review contractor compliance with the school recycling contract at least once each year. Any issues which arise that are deemed deficiencies on the part of the contractor are detailed in writing and reported to the contractor. The contractor must initiate actions

to correct all deficiencies found within 30 days of notification. If deficiencies are not being satisfactorily corrected, HCPS may take over service and pursue its completion, by contract or otherwise, and the contractor shall be liable to HCPS for all cost incurred.

**B. Harford Community College**

Harford Community College (HCC) is comprised of a main campus in Bel Air and two satellite locations, the University Center in Aberdeen and a second facility at Aberdeen Proving Grounds. The overall recycling strategic plan in place focuses on a variety of recyclables that will be included in HCC's recycling program and therefore significantly reduce the amount of trash that would otherwise require disposal. This program applies to all existing and future HCC facilities.

Harford Community College is a public, comprehensive, community-engaged institution of higher education. In cooperation with and with the support of Harford County Government, HCC has promoted the sustainability of recycling and solid waste management systems that include maximum efficiency, economic vitality and reduced environmental and human health impacts.

The college strives to reduce per capita waste generation and increase the recovery of recyclable materials. Recyclables in HCC's program must include but are not limited to mixed paper and cardboard. Other materials to be collected for recycling may include plastics (including plastic bottles and jugs such as water bottles and soft drink bottles, wide-mouth plastic containers and most other plastic items with the recycling symbol #1 through #7), glass food and beverage containers and metal food and beverage containers. Because HCC has a single stream collection program, the full range of recyclables is collected together in the same recycling containers.

In addition to HCC's single stream recycling program the college recycles computers, computer hardware, electronics, displays, monitors, audio-visual equipment, printers, scanners, copiers, motor oil, antifreeze, batteries, bulk scrap metal, fluorescent lamps and cooking oil. These materials are collected and recycled by vendors under contract to HCC or delivered by HCC to Harford County's Recycling Center located at 3241 Scarboro Road, in Street, Maryland.

The College currently has approximately 100 indoor and outdoor single stream recycling stations. . HCC is responsible for the purchase and maintenance of all recycling containers. The recyclable material collected at HCC is deposited into front loading or compaction containers located at the facility by HCC's contracted custodial service. Currently the recyclables from HCC are processed and marketed under multi-year contracts with Waste Management Recycle America. Additionally, HCC began participating in the Abitibi Paper Retriever fundraising program in May 2010

HCC fully supports efforts to increase recycling awareness, participation and environmental stewardship among students, employees and visitors at all HCC facilities. Effective education programs and commitment strategies support the development of new daily habits and practices that will lead to an increase in recycling activities. The effectiveness of these efforts is evidenced by its 2010 2nd place ranking in the nationwide Recyclemania competition among colleges and universities. Additionally, in 2010 the college ranked 20th in the nation for Recyclemania Grand Champion with a recycling rate exceeding 50 percent and also took 2nd place in the Waste Minimization category.

HCC will continue to evaluate the overall solid waste stream and collection service and practices in response to continued increases in college recycling percentages.

HCC offers various recycling related courses, has recycling exhibits at student, employee and community-oriented special events, places signs in all classrooms promoting recycling, participates in the national RecycleMania competition for colleges and universities to help improve recycling efforts nationally, and reduces the amount of its waste by buying and using recycled and recyclable products.

At least once each year, the HCC Manager of Environmental Services will conduct inspections, review service levels, investigate reported or unreported pick up and disposal complaints, meet with HCC and Contractor support staff to educate or review practices, and review Contractor compliance with the school recycling contract.. Any issues which arise from these visits that are deemed deficiencies on the part of the Contractor will be detailed in writing and reported to the

Contractor. The Contractor shall initiate actions to correct all deficiencies within 30 days. If deficiencies are not being satisfactorily corrected, HCC may take over service and pursue it to completion, by contract or otherwise, and the Contractor shall be liable to HCC for all cost incurred.

Once per year the Harford County Government, Department of Public Works Recycling Program Manager will request and review an annual update from the HCPS and HCC on prior year's results of the schools' recycling programs.

In summary, both HCPS and HCC have already implemented recycling strategic plans that cover a wide variety of recyclable materials. The County will continue the implementation of recycling activities in accordance with the HCPS and HCC plans.

### ***1.15.3 Fluorescent Lights***

With the phase-out of incandescent bulbs, there has been an increased usage of fluorescent and compact fluorescent lamps (CFL) by businesses and residents. As a result, Harford County has developed strategies to encourage the recycling of these items. These strategies, which are ongoing and which will continue, include Fluorescent and CFL recycling for County facilities, residents and businesses.

Residents are encouraged to recycle fluorescent lamp tubes and CFLs by dropping them off at the Harford Waste Disposal Center's Recycling Facility or bringing them to any of the County's Household Hazardous Waste (HHW) collection events. All items are packaged into large-capacity boxes especially designed for the lights. The full boxes are picked up by the County vendor and processed into recyclable materials. Additionally some retail stores such as Home Depot and Lowe's may offer fluorescent light recycling services.

For businesses, the County posts recycling information at [www.harfordcountymd.gov](http://www.harfordcountymd.gov) or [www.mdrecycles.org](http://www.mdrecycles.org). These programs are easy and convenient for County businesses.

#### ***1.15.4 Latex Paint***

Latex paint is a difficult material to recycle. Not only is it difficult to market unwanted or partially full cans of paint, it can be quite expensive to find a vendor to dispose and market the paint for secondary uses. Blended paint of all colors result in a grey color that has limited end-uses. In 2014 Harford County entered into an agreement with RePaint which accepts all useable latex paint dropped off by County residents. Paint is received by residents, segregated into similar color shades, removed by the vendor, and paints with similar colors are blended to produce a marketable product. There is no cost to the County for this program; however, due to freezing temperatures and its effect on the paint, this program is only available April through November. Between December and March, the latex paint is poured into a lined container which contains mulch to absorb and dry out the paint. The dried material is then landfilled during that time of year. In order to encourage paint recycling, residents are not charged for any item which is not disposed within the landfill, provided all of their materials are recyclable.

#### ***1.15.5 Used Cooking Oil***

Used cooking oil is another difficult material to recycle. Although there are some vendors that will accept used cooking oil for recycling at no cost, there are very few that will accept the material and provide the County with a revenue stream. Technology is widely available to refine used cooking oil into a biodiesel fuel product; however, fuel prices have influenced the profitability of such refining operations. In 2014, Harford County entered into an agreement with Isadorski Waste Oil Company to receive all used cooking oil dropped off by residential customers in return for nominal revenue back to the County. In order to encourage used cooking oil recycling, residents are not charged for any item which is not disposed within the landfill, provided all of their materials are recyclable.

### **1.16 Roadside Litter**

The Harford County Division of Environmental Services is responsible for the Harford County roadside litter control program. The roadside litter staff is responsible for picking up blown litter at the Harford Waste Disposal Center and both blown litter and illegal dumping along County roadways. This staff is assisted by County citizens sentenced to community service hours by a judge following conviction for a petty crime, or misdemeanors. Additionally, Harford County has a very successful Adopt-A-Road program, whereby County residents or groups of residents adopt a portion of a roadway in their community and agree to collect roadside litter at a specified frequency. The County provides supplies and materials for these residents.

In calendar year 2012 over 48 tons of roadside litter was collected and disposed of. In addition to this, over 33 tons of recyclables were collected on County roadways. This work represents patrolling over 180 road miles.

The Maryland State Highway Administration is responsible for the collection of roadside litter along all State roads.

## **2. Historical and Projected Waste Quantities**

The historical waste quantities for material that was disposed of at Harford County solid waste disposal facilities for the Calendar years 2003 to 2013 are presented in Appendix 8. The categories of waste types are broken into the categories as required by the Maryland Code of Regulations (COMAR) Section 26.03.03 (D).

It can be difficult to use historical growth rates of waste quantities to forecast future quantities, as there are many factors that affect how much waste is generated from one year to the next. The variables that can influence waste quantities include economic factors, recycling participation, and unforeseen future State mandates on waste diversion. Although the County's population will continue to grow and employment will continue to increase, these other factors will likely freeze

waste generation rates or increase them at a slower rate than the population and employment growth rates. Appendices 5 and 6 present the projected population and employment growth rates for the next 10 year planning period.

COMAR Section 26.03.03 (D) requires each County to include waste quantities in its solid waste management plan for the base year and subsequent milestone years. MDE has established 2012 as the base year for this Plan with 2016, 2020, and 2024 as subsequent milestone years. The waste quantities shall represent not only waste processed at facilities under the control of Harford County Government and the local municipalities, but also other State-permitted facilities that process waste that has been generated within Harford County. This information is presented in Appendix 9.

Appendix 10 presents waste quantities for the planning period which are expected to be processed only at facilities under the control of Harford County and the local municipalities within the County.

### **3. Imported Wastes**

With the exception of some very specific waste types permitted at the HWTEF, Harford County normally does not allow out-of-County waste to be disposed of at any Harford County solid waste disposal facility.

With authorization from Harford County, the owner and operator of the HWTEF allows out-of-county waste to be disposed of at that facility to enhance efficiencies of the incineration process and to enhance revenues to offset operating expenses. Out-of-county materials allowed include scrap tires, and permitted materials (such as classified Government Documents, currency, and postage stamps all of which require witness burns by the governing agency).

The County has also authorized disposal of waste received from Baltimore County. In January 2008, Harford County entered into a Municipal Solid Waste Disposal Agreement after it was discovered the time to permit, design, and construct the HWDC landfill expansion would exceed

the time to consume the remaining capacity of the landfill at that time. This Agreement allowed Harford County to re-direct the solid waste generated within the County that exceeded the capacity of the HWTEF to Baltimore County for disposal at the Eastern Sanitary Landfill in White Marsh. The Agreement did not include compensation to either party. However, in exchange for accepting Harford County waste in Baltimore County, an equal amount of waste would then be delivered back to Harford County, plus 30 percent, when the HWDC landfill expansion was completed. The majority of this waste was to be delivered to the HWTEF with the balance delivered to the HWDC landfill. The landfill expansion project was able to accept waste beginning in October 2010, and therefore the waste importing commenced at that time. It is forecast that it will take until 2016 to satisfy this commitment.

#### **4. Exported Wastes**

Information provided by MDE indicates approximately 112,000 tons of solid waste was exported out of the County by private companies in 2012. The majority of these materials included scrap metal and other materials that were recycled, C&D, and dead animals. Appendix 9 provides a breakdown of these quantities.

#### **5. Calculation of MSW Recycling Rate**

The Maryland Recycling Act (MRA), Section 9-1705 of the Environment Article, Annotated Code of Maryland, requires each County to document its recycling rate and submit the results to MDE for review and comment. MDE has developed “Tonnage System Reporting Guidelines” for calculating the recycling rates in accordance with the MRA. Appendix 11 presents historical recycling rates of Harford County and Appendix 12 presents historical waste diversion information for the past 10 years.

#### **6. Solid Waste Collection Systems**

The solid waste collection system in Harford County consists of three components:

- Privately owned, licensed waste haulers
- Municipal waste collection
- Self-hauling

Each of these components of the County's waste collection system is described below.

### **6.1 Private, Licensed Waste Collection Companies**

Most residential and commercial waste in Harford County is collected by County-licensed, privately owned waste collection companies. Private waste collection companies and County/local agencies licensed in 2014 to operate in Harford County are listed in Appendix 13.

Except for residential waste collection in the municipalities and waste collection at APG, Harford County employs a free-enterprise system of waste collection, in which individual residents, landlords, businesses, industries and institutions contract with the private company of their choice to provide waste collection services. The City of Aberdeen and the Town of Bel Air each provide their own waste collection through their own staff and equipment. The City of Havre de Grace contracts out their waste collection service to one private licensed hauler. APG also contracts for collection of residential dwellings, office buildings, and research labs.

The County requires licensed private waste collection companies to provide residential solid waste collection services a minimum of once a week and a separate recyclables collection at least once a week.

## **6.2 Municipal Waste Collection**

The Town of Bel Air and City of Aberdeen are the only incorporated municipalities in Harford County that operate their own residential waste collection systems. In addition to residential trash, these municipalities also collect yard trim and recyclables.

As discussed above, the City of Havre de Grace contracts with private haulers for residential waste collection and recycling.

## **6.3 Self-hauling**

Residential, commercial, industrial and institutional waste generators can self-haul wastes to the HWDC. The HWDC offers a variety of waste and recycling drop-off programs to self-haulers in addition to landfilling refuse. These collection facilities include:

- Single Stream Recycling
- Residential Electronic Waste
- Residential White goods
- Residential Used oil and antifreeze
- Residential Stale Gasoline/oil mixture
- Residential Wet cell batteries
- Yard Trim

- Residential Scrap tires
- Residential Textiles
- Residential Propane Bottles
- Residential Fluorescent lights
- Residential Asbestos
- Residential Latex Paint
- Semi-annual Residential Household Hazardous Waste Collection Day

In addition to the HWDC, other drop-off facilities that are available to the public include eight oil and antifreeze drop-off centers located throughout the various geographic regions within the County; as well as the residential Yard Trim drop-off facility located at the former Tollgate Landfill located on Tollgate Road in Bel Air, across from the Equestrian Center. The used oil facilities can be found on the Division of Environmental Services website at [www.harfordcountymd.gov](http://www.harfordcountymd.gov) instead of this Plan as they may change location periodically.

## **7. Existing Licensed County Solid Waste Acceptance Facilities**

This section describes the existing and active solid waste acceptance facilities within the County. The location of these facilities is shown in Appendix 14.

### **7.1 Harford Waste Disposal Center (HWDC)**

Permit Nos. 2012-WMF-0570 (Exp. 10-3-17), 2010-WMF-0098 (exp. 9-15-15)

MD Grid Coordinates N719,100/E 1,510,500

The HWDC is located in Street, Maryland, a rural area of northern Harford County. The facility is located on 398 acres of County-owned land bounded on the north by Dublin Road (MD Route 440), on the west by Scarboro Road, and on the south by Sandy Hook Road. The HWDC includes the following facilities:

- The County's only active municipal sanitary landfill;
- The mulch and compost facility
- The recycling transfer station
- The County's only homeowner convenience center for residents to drop off household waste and recyclables.

While the HWDC is located in a primarily rural area, residential homes border the site along Scarboro Road and Dublin Road. The County has maintained a buffer between its landfilling and maintenance operations and the residential community.

The HWDC property has been the location of a solid waste management facility since the 1950's. An unlined landfill referred to as the Scarboro Landfill was operated from 1957 through 1986. The County operated the landfill using a combination of open burning and trench disposal methods. In late 1986 the Scarboro Landfill was closed in accordance with an MDE approved closure plan. The site is partially capped by the lined cells A and B of the HWDC Landfill.

A permit for the first lined landfill cells at HWDC was issued in 1985, and the initial cells were put into service in 1987. These cells designated A through J are situated on approximately 39 acres of the HWDC, and were constructed in several phases to meet demand for disposal capacity. A closure plan for cells A-J was approved by MDE on January 27, 2014. The construction of the

landfill cap was under contract in 2014 and is expected to be completed in 2015. The cap will extend over portions of the Scarboro Landfill which have not previously been capped. The total capacity of Cells A-J is approximately 2.9 million cubic yards, nearly all of which will be utilized at the time when the landfill is capped. The landfill currently operates under Refuse Disposal Permit No. 2010-WMF-0098, which expires on November 15, 2015.

Additional landfill cell capacity was approved by MDE by issuance of a new refuse disposal permit (2000-WMF-0570) on October 5, 2007. The expanded area includes additional landfill cells situated to the north, west, and south of cells A-J. Cell N1 was completed and placed into service on September 26, 2011. The construction of Cell N2 began in 2014 and is expected to be in service in the spring of 2015. These cells are constructed and operated pursuant to Refuse Disposal Permit No. 2012-WMF-0570, which expires on October 3, 2017. The combined capacity of cells N1 and N2 is approximately 1.8 million cubic yards, of which approximately 0.4 million cubic yards had been used as of January 2014

The HWDC landfill cells receive residential and commercial (including nonhazardous industrial and institutional) wastes generated within Harford County, and ash residue from the combustion of wastes at the HWTEF. Beginning in 2016 when the HWTEF ceases operation, ash residue will no longer be disposed of at the landfill. Pursuant to the solid waste disposal agreement with Baltimore County, beginning in early 2016, the majority of solid waste generated in Harford County will be transferred to disposal facilities outside of Harford County. Accordingly waste disposal in the landfill cells will be curtailed in future years.

Topographic mapping of the HWDC landfill is performed annually using aerial photography. The mapping is completed at the end of each calendar year, allowing comparison to the map from previous year, and estimation of the used and available capacity of the landfill cells. As noted above, in January 2014, the remaining capacity of cell N1 combined with the new capacity of cell N2 was approximately 1.4 million cubic yards. Landfill volume will be filled at a rate of approximately 0.2 million cubic yards per year for 2014, 2015, and 2016. The rate of landfill utilization is expected to reduce to less than 0.02 million cubic yards per year in subsequent years.

The remaining available capacity of cells N1 and N2 at the end of 2025 is expected to be approximately 0.7 million cubic yards.

Additional landfill cell areas are included in the current refuse disposal permit. An additional cell, designated N3, is located adjacent to and to the west of cells N1 and N2. A separate group of landfill cells is located to the south of cells A-J. The combined capacity of these additional cells exceeds 3 million cubic yards; however, Harford County has elected to pursue other waste disposal options at this time rather than build the new cells.

In addition to the municipal sanitary landfill, the HWDC currently serves as the County's central recycling center for the drop-off of white goods, textiles, wet cell batteries, electronic waste, empty propane cylinders, latex paint, and single stream recyclables. The HWDC also accepts used oil, antifreeze and stale gasoline/oil mixture for recycling. Self-hauled, vehicle tires are accepted at the HWDC for transfer to the HWTEF. Besides tires and other recyclable materials, residents can also dispose of non-recyclable household refuse at the HWDC's homeowner's disposal facility. Since June 1992, yard trim, including leaves, grass clippings, and natural woody vegetation has been accepted at the County's 11-acre mulch and compost facility located at the HWDC. Other facilities located at the HWDC include a scale and scale house, administrative offices, maintenance buildings, equipment storage areas, parking areas, leachate holding tanks, a stormwater management system, water and septic systems, groundwater monitoring wells, and borrow and stockpile areas for daily cover material.

Harford County has determined the landfill and recycling transfer operations at the HWDC landfill will not meet the County's long-term waste disposal needs. A discussion on this matter is presented in Chapter 4 and 5.

## **7.2 Harford Waste Disposal Center (HWDC) – Yard Trim Facility**

Permit Nos. 2012-WMF-0570 (Exp. 10-3-17), 2010-WMF-0098 (exp. 9-15-15)

MD Grid Coordinates N719,100/E 1,510,500

Yard trim material is defined as leaves, grass clippings and woody debris (branches, garden trimmings, bushes, Christmas trees) found in the municipal solid waste stream. The Environmental Protection Agency (EPA) estimates that yard trim constitutes approximately eighteen percent (18%) of the national municipal solid waste flow. Recovery of yard trim by processing into a high-grade compost and mulch is an integral component of Harford County's integrated solid waste management program.

In 1992, Harford County imposed a ban on the landfilling or incineration of yard trimmings from residential and commercial generators. The ban prohibits yard trimmings from being collected with trash. As a result, separate yard trimmings collection by the private haulers is necessary. Where collection by a private hauler is not available, drop-off sites have been set up at the HWDC for residents and businesses and the former Tollgate Landfill for use by county residents only.

The HWDC has an eleven-acre, paved Mulch and Compost Facility that processes approximately 40,000 tons of material each year. These quantities vary depending upon the amount and severity of storms throughout any given year.

Through the State-approved mulching and composting operation, mulch and compost is made available to Harford County residents and businesses. Residents may self-load three (3) 30-gallon bags or cans of mulch or compost per trip at the HWDC free of charge whenever it is available. Larger quantities can be purchased by residents and businesses at the established rates.

### **7.3 Harford Waste-to-Energy Facility**

Permit No. 2013-WTE-0576

MD Grid Coordinates N572,000/E 993,000

The Harford Waste-to-Energy Facility (HWTEF) is located at the Edgewood Area of Aberdeen Proving Grounds (APG), at 1 Magnolia Road in Joppa, Maryland. . The HWTEF was developed for Harford County by the Northeast Maryland Waste Disposal Authority (the Authority) under its

revenue bond financing authority. The facility is owned by the Authority on behalf of Harford County and operated by Energy Recovery Operations, Inc. (EROI).

In the facility, waste is combusted in a controlled two-stage thermal oxidation process. In the first stage, waste is combusted in a nearly air-starved environment and is thoroughly converted to its further oxidizable gases. Air is added to these gases in a large second chamber where time, temperature and turbulence assure complete oxidization of the products. The heat released is used to make steam from water and the steam is piped to the Edgewood Area of APG for use in heating and cooling buildings. The steam generated provides about 50% of the steam needs of the Edgewood Area of APG. Without this steam, the Army would have to burn oil or natural gas. The U.S. Government purchases the steam under a supporting long-term commitment which contributes to the relatively low scheduled net operating cost to Harford County. Although Harford County uses private-sector services for the operation of its waste-to-energy facility, the County maintains complete control over the incoming waste and disposal of the remaining residue (ash).

In order for this project to be economically and operationally viable, the execution of several contracts and agreements were required which involve Harford County, the Northeast Maryland Waste Disposal Authority, the Army, and EROI. These documents include (1) a Waste Supply Contract between Harford County and the Northeast Maryland Waste Disposal Authority, (2) a Steam Purchase Agreement between the Northeast Maryland Waste Disposal Authority and the Army, (3) a Property Lease between the Northeast Maryland Waste Disposal Authority and the Army, and (4) a Management, Operation and Maintenance Agreement between the Northeast Maryland Waste Disposal Authority and EROI.

Generally, the Waste Supply Agreement discusses the County's commitment to provide the necessary quantities of solid waste to satisfy the steam supply needs stated in the Steam Supply contract. This Agreement also presents the County's responsibilities with respect to payment of the facility operation and maintenance costs and debt service. This Agreement expires on March 17, 2016.

Generally, the Steam Purchase Agreement discusses the responsibilities of the Authority to provide certain quantities of steam to the Army and the responsibilities of the Army to compensate the Authority for purchase of the steam. This Agreement expires on March 17, 2016.

Generally, the Property Lease discusses the Army's permission to allow the Authority to use the 13-acre parcel of land owned by the U.S. Government. In return, the Authority is to compensate the Army for the Lease arrangement. The Property Lease expires on March 17, 2019. Of note, the Lease requires the HWTEF and associated 3 miles of underground steam lines to be completely removed from the U.S. Government Property before the end of the Lease period.

Generally, the Management, Operation and Maintenance Agreement discusses the responsibilities of EROI to operate and maintain the facility in accordance with the approved budget to meet all permit conditions and to supply the requisite quantity of steam to the Army.

The quantities of materials processed at the HWTEF for the baseline period are presented in Appendix 10.

The types of material processed at the facility are governed by Federal law, Maryland law, and County law. Acceptable waste is essentially defined as household and commercial garbage, trash, rubbish and refuse of the kinds normally collected or disposed of in the County as a result of residential and commercial waste collection practices required by the County. Unacceptable wastes are defined consistent with all Federal and State prohibitions (e.g., controlled hazardous substances).

The HWTEF operates under several Maryland permits—including a Refuse Disposal Permit and a Title V Air permit--both issued by the Maryland Department of the Environment. These permits are active and renewed periodically as required by the permit conditions.

Ash residue, the by-product of combustion, generated by the facility has been, and will continue to be tested in accordance with the permit conditions. Since commencement of operations in 1988,

the data from the tests characterize the ash residue as nonhazardous.

The anticipated remaining service life of the facility can be assessed on the basis of contractual provisions together with performance considerations. The normal useful life of such facilities is at least 30 years, and the existing steam contract expires in March 2016. However, Harford County and the Army have mutually determined that the facility will not meet the respective long-term needs of each party. A discussion on this matter is presented in Chapter 4.

## **8. Existing Licensed Privately Owned Solid Waste Acceptance Facilities**

### **8.1 Auston Processing Facility and Transfer Station**

Permit No. 2012-WPT-0616 (exp. 1-14-18)

MD Grid Coordinates N 983,000/E 583,000

Auston Contracting currently operates a processing facility and transfer station on a 6-acre site located on Pauls Lane in Joppa, Maryland, which is located just to the south of the intersection of Maryland Route 7 and Maryland Route 152. Auston has a two totally enclosed, steel pole buildings at its Pauls Lane facility, a 21,000 square foot building and a 10,000 square foot building, that currently are utilized, in part, for maintaining vehicles, processing (shredding) tires for transport out of State, processing rubble and construction demolition debris, and maintaining Auston's vehicles and roll-off containers. The existing permit authorizes Auston to accept construction and demolition debris, land clearing debris, bulky waste, scrap tires, and other recyclables (ie. scrap metal and cardboard, etc.). Allowed hours of operation are 6:00 am to 6:00 pm Monday through Friday and 8:00 am to 2:30 pm on Saturdays. The maximum quantity of solid waste that can be accepted in any given year shall is 159,600 tons. The following wastes are permitted for acceptance:

- Household appliances and white goods provided that any refrigerant is removed from the

appliances before processing and is handled in accordance with Federal regulations.

- Source separated recyclables such as glass containers, plastic containers, paper, etc..
- Friable asbestos waste provided the material is received in packaging and labeled in accordance with State Regulations

Used Tire Processing Facility: Auston also has a scrap tire hauler license, and a scrap tire recycler license issued by MDE. Auston has the equipment required to separate tires from wheel rims and to cut and shred all sizes and shapes of scrap tires into six-inch strips that are used in Virginia and other sites as intermediate landfill cover. These strips burn more efficiently in resource recovery facilities, such as the HWTEF and BRESKO, the Baltimore City resource recovery facility. This shredding equipment greatly reduces the volume of used tires, making them more economical to transport, and affords the County and the State a facility capable of processing illegally or improperly disposed of scrap tires as well as scrap tires regularly collected by service/collection stations and new tire retailers. Tires arriving at the facility are maintained inside and under cover, and are rapidly processed, and the shredded pieces are transported from the facility to a place where use or disposition is permitted. Tires are not allowed to sit outdoors at the facility where they could collect water and become a breeding ground for mosquitoes, insects, or other animals or vectors, or pose a potential fire hazard for vandals.

Recycling Processing Facility: Auston processes recyclables and other materials allowed under the refuse disposal permit.

## **9. Contested Solid Waste Disposal Facilities – Gravel Hill Rubble Landfill**

Maryland Reclamation Associates, Inc. (“MRA”) was the permittee for an inactive commercial rubble landfill intended to consist of 35 acres on a 55.4 acre site. The property is located south of the 4100 block of Gravel Hill Road, east of Havre de Grace. The site is a former sand and gravel surface mine, and includes a small existing fill area consisting of stumps and land clearing debris allowed to be filled on the property in the 1980s under an industrial waste permit that is not currently in use. The rubble landfill was first permitted on February 28, 1992, and Refuse Disposal

Permit No. 2002-WRF-0517 was issued as a renewal permit by the Maryland Department of the Environment on December 6, 2003. In November 2008, MRA applied for a renewal permit. As required by the Maryland Administrative Procedures Act, the permit was administratively extended past its expiration date of December 7, 2008 while MDE deliberated on issuing a permit renewal. On July 26, 2010, MDE issued a letter to MRA denying the refuse permit renewal. As a result this permit no longer exists. MRA did not appeal the denial.

Even though MDE issued a refuse disposal permit in 1992, the rubble landfill was never constructed due to litigation between MRA and Harford County Government over zoning conformance. If zoning approval had been granted, the renewed permit would have required the development of updated geologic and hydrologic data and a new design incorporating a liner, leachate collection system, and other protective features that were not included in the original 1992 design in order for the facility to comply with revisions to Maryland solid waste regulations at Code of Maryland Regulations (“COMAR”) 26.04.07 which went into effect in 1997 before the landfill could be constructed and operated.



**CHAPTER IV**  
**ASSESSMENT OF SOLID**  
**WASTE**  
**MANAGEMENT**  
**NEEDS**

## **ASSESSMENT OF EXISTING SOLID WASTE MANAGEMENT NEEDS**

In this chapter, the existing County solid waste management system is evaluated for its adequacy to meet the goals and objectives of this plan for the ten year planning period. Feasible alternative technologies, management techniques, and regulatory modifications that could be used to meet identified requirements are discussed. In addition, siting constraints for potential new management facilities are reviewed.

In January 2014, Harford County utilized Pinnacle Communications to perform an independent phone survey to obtain input from County residents on various issues regarding existing solid waste and recycling programs and facilities, convenience, and personal practices. The script for the survey questions was developed by Harford County in consultation with Pinnacle Communications with the intent to obtain enough respondents from each individual County zip code to make the results statistically significant. The phone survey was conducted over a two-week period in early January 2014 during which residents within each zip code were randomly called by Pinnacle staff. Over 700 residents contributed to the survey results. The results of this survey were used as one of the many tools utilized in developing the solid waste and recycling programs for the next 10-year planning period. A copy of the survey questionnaire and results is presented in Appendix 15.

On July 15, 2014, the Department of Public Works, Division of Environmental Services hosted a Community input meeting. The meeting was advertised in the local paper and posted on the County website two weeks in advance. The purpose of that meeting was for the Division of Environmental Services to solicit input from the community on the existing solid waste and recycling programs and future programs for the next planning period before the County began work on drafting this Plan. County residents had one month to provide feedback to the County by email. A copy of that presentation and a categorization and summary of the comments are presented in Appendix 16.

### **1. Management Needs – Municipal Solid Waste**

As presented in Chapter 3, approximately 251,227 tons of solid waste and recyclables were processed

by Harford County in calendar year 2012. This amount included waste received from Baltimore County as part of the waste exchange agreement. In 2016 it is estimated Harford County will process approximately 222,000 tons of solid waste and recyclables. To address its waste management needs, Harford County currently employs the following techniques: (1) waste reduction; (2) recycling and yard waste processing; (3) resource recovery; and (4) in-County landfilling. All of these components are interrelated and integral to the current solid waste management system. The success of one element within the system is often dependent on the successful implementation of others. An understanding of this interdependence is critical to the fiscal and operational efficiencies of the system.

### **1.1 Waste Reduction, Public Outreach and Education**

Waste reduction is the preferred method in the solid waste management hierarchy. Reductions in waste generation lessen the burden of solid waste management by decreasing the amount of material entering the system. The waste reduction plan reflects a multi-faceted approach.

Harford County has consistently spent considerable resources annually targeting County residents with various forms of advertisement through local radio, newspapers, magazines, and website ads. In addition, the Office of Recycling maintains a website, [Harfordrecycles.org](http://Harfordrecycles.org), that includes in-depth information on the importance of waste reduction and information regarding all the recycling programs available for County residents. The website is updated frequently to highlight seasonal programs and events (Christmas tree recycling, Grasscycling, etc.). The Harford County Reuse Guide is maintained on this website as well as a list of frequently asked questions.

Brochures are available for Harford County residents both on our website and in print. Topics include Grasscycling, Single Stream Recycling, Business Recycling, Textile Recycling, Electronics Recycling, General Recycling Available at the HWDC, and Mulch and Compost Information. Information also includes used motor oil and antifreeze recycling on the website.

Social media has become a critical tool for outreach and education. The Office of Recycling maintains a Facebook page which encourages communication and engagement with residents and

businesses concerning waste reduction and recycling opportunities. The Facebook page allows the Office of Recycling to post educational information, address questions, and promote recycling. Contests and giveaways are employed to encourage participation and discussion on the page. The Office of Recycling will continue to maintain an active presence on mainstream social media networks.

Harford County Public Schools recognizes the importance of recycling, and as such, the Harford County Recycling Coordinator provides a presentation to every Fourth Grade science class in the Harford County Public School system and teaches the importance of waste reduction and recycling. The Office of Recycling provides presentations, lessons, and activities to accompany the curriculum. In addition, the Office of Recycling acts as a resource for middle and high schools. This takes the form of providing teacher training and materials, presentations and lessons for students, and assistance in special recycling events. School groups are also encouraged to visit the HWDC to see landfilling and recycling in action.

Community outreach is another important aspect of public education. Community groups are encouraged to contact the Office of Recycling and schedule presentations and tours of the HWDC. Touring the HWDC meets the requirements for Cub Scout groups working towards merit badges. In addition, the Office of Recycling participates in local special events, expos, fairs, and business events to highlight recycling.

Businesses are also encouraged to recycle through the Partners in Recycling program. This program recognizes businesses who are recycling with a display sticker, a listing on our website, and inclusion in media advertising. The Office of Recycling provides assistance to businesses looking to recycle in the form of waste assessments, educational materials, and training sessions in waste reduction and recycling. The Office of Recycling also reaches out to businesses and offers on-site visits to discuss business recycling opportunities and the result on their bottom-line. Businesses that are recycling are encouraged to apply for recognition through the annual Business Recycling Awards program. Awards are given to a small business, a large business, and a property management company who demonstrate a commitment to recycling and source reduction in their

organization. Award winners receive a plaque during a public award ceremony, and are included in an announcement through various media outlets.

## **1.2 Recycling**

Appendices 11 and 12 present the historical achievement in the amount of municipal solid waste that has been diverted from the waste stream since the inception of the County recycling program in 1992. During calendar year 2013, over 127,000 tons of solid waste was diverted from the waste stream and recycled. This represents a County waste diversion rate of approximately 60 percent. Harford County has consistently had one of the highest recycling rates in the State. These rates have been achieved under a solely voluntary recycling program.

### ***1.2.1 Residential Sector***

The curbside collection of waste and recyclables is accomplished through the free enterprise system; whereby residents subscribe to collection services provided by local trash collection companies if they desire curbside pick-up. The County Code requires all licensed trash collectors to pick up recyclables a minimum of once per week. Residents who do not subscribe to a curbside collection service may drop-off material at the HWDC. Further information on the residential collection system within Harford County is presented hereinafter. The 2014 phone survey indicated about 85 percent of all residents recycle with about 80 percent subscribing to a curbside collection program and about 4 percent self-hauling to the HWDC. It was also interesting to discover that the 15 percent who do not recycle reported that either it was too inconvenient or their Homeowner's Association or Landlord do not offer recycling at their community. This information indicates additional public outreach opportunities may exist with these individuals.

All other recyclables, with the exception of yard trim, waste oil, and antifreeze, must be dropped off at the HWDC as presented in Chapter 3. The HWDC is the only facility in the County which accepts all other recyclable materials. Unfortunately, the location of this facility is not convenient to many residents who live within the Development Envelope. In fact, the 2014 phone survey indicated the

majority of residents consider the HWDC to be inconvenient to them. Reasons for the inconvenience include the isolated location in the northern portion of the County as well as significant traffic congestion experienced on Saturdays.

Although Harford County has been a leader in its recycling rates, significant amounts of recyclables are observed daily within the solid waste loads disposed of at the HWTEF and HWDC landfill. Harford County has spent over \$300,000 annually in its public outreach and education programs during the past planning period. It is believed that, no matter how many resources are utilized in public outreach and education, at some point a plateau is reached in its effectiveness. No matter how much effort is put into this endeavor, there will always be residents who refuse to participate in recycling. Funding, education, and outreach alone cannot change everyone's behavior. Based on the above information, it is felt that imposing mandatory recycling would most certainly increase residential recycling participation and quantities. Mandatory recycling would require additional staff to assist in the enforcement efforts. Another method that could also increase participation is the contracting of curbside collection so that all residents would be provided with curbside recycling services with recycling carts to increase the convenience of recycling. A poll of local county recycling managers has shown that Maryland counties (Howard and Anne Arundel) which provide curbside collection services along with a recycling cart to each residence achieve significantly greater curbside recycling participation than those Counties that do not. Such curbside collection programs could also be used to develop a uniform system whereby customers are charged based on the amount of waste they dispose of at the curb. Such pay-as-you-throw programs have proven to be quite effective elsewhere across the country. Some of the private trash collectors in the County already offer reduced rates to their customers for limiting trash quantities and allowing unlimited quantities of recycling. As discussed in Chapter III, State Law will require all owners of Apartments and Condominiums with 10 units or more to offer recycling to its tenants by October 1, 2014. It is felt this requirement will assist in capturing additional recycling quantities.

### ***1.2.2 Commercial Sector***

The curbside collection of waste and recyclables among businesses is also accomplished through the

free enterprise system, whereby business owners subscribe to collection services provided by local trash collection companies if they desire curbside pick-up. Business recycling in Harford County is strictly voluntary. Unfortunately, many businesses do not recycle which is evidenced by significant quantities of recyclables observed entering the HWTEF and HWDC landfill for disposal. Whenever large quantities of recyclables are received, the County attempts to track the origin of the load and pinpoint the business that generated the recyclables. Some conversations with these business owners indicate that (1) the local trash collection companies market their services in ways that do not lessen the business owner's costs for recycling and/or (2) it is corporate policy not to recycle unless local government laws require recycling. Similar to residential recycling, mandatory recycling in the business sector is worth considering for implementation within the next 10-year planning period.

### ***1.2.3 Harford County Department of Parks and Recreation Facilities***

Harford County Department of Parks and Recreation is responsible for 113 public parks, facilities, trails, and other lands throughout the County. Additionally, the Department works in partnership with Harford County Public Schools to maintain sports fields and stadiums at the 53 schools in Harford County. As part of the 2013 Harford County Land Preservation, Parks, and Recreation Plan, the Department identified recycling and other conservation practices as part of the Department's overall strategic plan.

Department Goal PR-7 states "Incorporate sustainable development and conservation practices in all Parks and Recreation parks and facilities." As part of this challenge, the Department determined to meet this goal and integrate single stream recycling in all parks, centers, offices, sports fields, and special events by 2015. With a Department-wide effort, the goal was achieved a year ahead of schedule.

Working in partnership with Harford County Public Schools, the Department began a pilot program in 2009 to implement single stream recycling at public school stadiums. The program expanded in 2010 to four additional schools. The program expanded again in 2011 and in August

2013, the Department expanded to all school sites as part of a County-wide implementation at all Department parks and facilities.

In September 2012, the Department started a pilot program at the Churchville Recreation site for single-stream recycling. This program was partially funded through a Keep America Beautiful grant that paid for the recycling containers that were placed throughout the park site. During the first year of this pilot program, approximately 2 tons of recyclable material was collected at the Churchville Recreation site.

As a result of the successful partnership with Harford County Public Schools and the pilot program at the Churchville Recreation site, the Department of Parks and Recreation fully implemented single stream recycling at all parks, centers, offices, sports fields, and special events in August 2013. Working in cooperation with the Harford County Office of Sustainability and the Department of Public Works-Division of Environmental Services-Recycling Office, Parks and Recreation purchase 400 additional recycling containers, lids, and signage to implement the “Recycling Just Like at Home” program. During the first year of the program, the Department of Parks and Recreation collected more than 50 tons of recyclable material.

### **1.3 Collection**

Alternatives for the collection of waste, recyclables, and yard trim/organics include the free enterprise system, contracting, and public operation. Each of these collection alternatives is described below to provide a basis for evaluating the County's existing collection system. It should be noted this alternatives analysis only considers the collection of residential waste. With the exception of the free enterprise system, controlling the collection of commercial waste poses significant complications as the type of collection vehicles used in the collection of commercial waste are different than those used for residential waste. First, the curbside collection of residential waste is accomplished by use of rear loading trucks or side-loading automated trucks. The collection of commercial waste is accomplished by front-loading trucks which service dumpsters, roll-off trucks which service roll-off bins, and compactors which are typically used at grocery and department stores. To complicate matters further,

each business has different waste disposal needs in terms of container size and frequency of collection. Tracking and servicing the needs of every business can be daunting at best.

### ***1.3.1 Assessment of Collection Alternatives***

#### **A. Free Enterprise System**

The free enterprise system operates by private subscription for waste and recycling collection services. Individual homeowners, apartment complexes, commercial establishments, industries, or institutions contract directly with a private hauler to collect their solid wastes. Individual clients are billed for services by the private hauler. Those residents who do not contract with a private company self-haul their own solid waste directly to the landfill. The advantages and disadvantages of the free enterprise system are described below. Under the free enterprise system, local governments typically establish standards that the haulers must meet through a licensing program to ensure safe and sanitary collection methods. Some local governments also impose flow control on licensed haulers in which local ordinances give the government authority to specify the disposal locations for all waste generated within their jurisdiction. The purpose of flow control is to ensure a steady revenue stream that supports not only the government's cost to operate their disposal facilities but also all other solid waste programs such as homeowner convenience centers, recycling, maintenance facilities, administrative and engineering staff, public outreach, mulch and composting, litter control programs, and post-closure care and maintenance of closed landfills. These programs allow for the establishment of self-sufficient user-based fees in lieu of the local government's General Fund.

##### **i. Advantages**

The free enterprise system requires minimal government involvement. The individuals or commercial establishments are free to deal with the hauler of their choice. If service is unsatisfactory, there are no barriers to choosing another hauler, provided the customer has other choices. Not every trash collector in the County has the ability to service the entire County. The cost for hauling and disposal of the waste is billed directly to the customer.

Private enterprise is encouraged with the free enterprise system. Opportunities exist for any small entrepreneur who desires to go into business.

## **ii. Disadvantages**

In a free enterprise system, overlapping routes are prevalent. Often, a neighborhood or street will be serviced by several different private haulers. In terms of labor, equipment, operation, and maintenance, this system is potentially less cost effective and significantly less efficient than a system with assigned routes that do not overlap. This type of system imposes greater impacts to the environment by producing greater greenhouse gases due to the route overlaps, more wear and tear on public roads, and more traffic congestion. These inefficiencies and additional fuel consumption costs are passed on to the consumer. In a free enterprise system the trash collectors assume an inherent risk in their revenues as it is uncertain from one quarter to the next what their customer base will be. The costs associated with this risk and cost for marketing their services are also passed on to the consumer.

Because of the lack of government involvement with the free enterprise system, it is impossible to control consumer costs. This is more significant when one or two companies have the greatest market share. Companies can increase costs at any time and for any reason they choose. When this happens, many consumers have no recourse, as many of the smaller companies have very limited service areas. Most consumers pay for 3 months of service in advance which has led to complaints of customers not being reimbursed by haulers for cancelling their service mid-term.

Flow control can be very difficult to enforce under a free enterprise system. Typically for those government's that have flow control ordinances, fees are based on the assumption that a certain quantity of waste will be disposed of within their facilities which, when multiplied by the quantity of waste will provide the necessary revenue to support expenditures. If those projections are not met due to some haulers not complying with flow control, the necessary revenue will not be realized. It becomes difficult and costly to adequately enforce flow control ordinances under the free enterprise system.

## **B. Contracting**

Under a trash collection contracting system, the County would be geographically divided into several districts. The County would publicly solicit qualified private trash collectors to bid on one or more districts for a specified multi-year contract period. The lowest responsive, responsible bidder within each district would be awarded the contract for that district. The County would develop a staff to administer the contracts, establish a customer call center that would answer calls from residents and submit complaints and work orders to the contractors, and have route inspectors to ensure all residents are serviced on the scheduled pick-up days. The County would also directly bill each homeowner annually to cover the cost of the program.

Many counties in the State currently contract their waste and/or recycling collection service. These jurisdictions include Howard County, Anne Arundel County, Frederick County, Baltimore County, Montgomery County, and Prince George's County.

Under the contracting system, most properties with a residential dwelling would be served by the program. Carts could also be provided to the homeowners for both trash and recycling. The contractor for each district would be responsible for establishing routes within its district and to maintain the same pick-up schedule for the duration of the contract period. The County contract would establish performance standards for the services provided under the program with certain penalties for missing the performance standards.

Consideration would be given to limitations on what types of residential dwellings could be served under the program. For example, apartments and multi-story condominiums are typically serviced by dumpsters that would require different types of collection vehicles, thus impacting the efficiency of the program. Consideration would also have to be given to townhouse communities under HOA regimes and how those communities would be provided cart service as some HOA covenants do not allow the placement of carts in front of homes. It can also be cumbersome and inconvenient for some to carry a trash can from the rear of the house to the front on pick-up day when there are several homes in a row with common walls. Another consideration is access onto private roads as many

townhome communities do not front public roads.

**i. Advantages**

The elimination of overlapping collection routes and the competitive bidding for those routes should result in the reduction of collection costs for homeowners serviced under this program. More efficient routing for collection vehicles results in less fuel consumption, traffic, and exhaust emissions. The trash collection companies would have a guarantee on their customer base for a multi-year period. The contracting system also significantly stabilizes the collection costs over the contract period in contrast to current practices of sudden and unexpected cost increases.

The contract system facilitates the implementation of new management policies through incorporation of requirements in the contracts.

Future State regulations may require increased recycling rates and additional waste diversion methods such as separate food waste and yard waste collection. A contracting system is well-suited to implement such programs quickly, efficiently, and uniformly.

Although recyclable collection and volume-based billing can be implemented in the free enterprise system, the increased control afforded to a local government in a contract system would facilitate implementation and monitoring of these measures.

Mandatory collection can significantly reduce the occurrence of vagrant dumping, roadside litter, and the introduction of waste generated outside the local jurisdiction into the local solid waste management system. It can also relieve the burden on existing home-owner convenience centers which experience significant traffic congestion on weekends.

The contract system will also significantly enhance flow control for residential waste as the terms and conditions of the contract will require disposal at specified facilities. Contract systems are a hybrid between free enterprise systems and public operations and provide a balance between government

involvement and private business, thus creating a public-private system.

If a county would wish to encourage recycling through a volume-based billing system, otherwise known as a “pay-as-you-throw” program, the contracting system would allow for the standardization of weighing systems and recalibration under the terms and conditions of the contract as well as the establishment of a centralized data tracking center.

Governments that have implemented trash collection contracting programs have seen a reduction in cost to the consumer and an increased level of customer service.

## **ii. Disadvantages**

Some of the smaller local trash collection companies have argued that this program will force them out of business. However, it should be noted that the smaller companies, by virtue of their existence have been able to compete against the larger companies and therefore could have a competitive advantage in the bidding process. These concerns can be alleviated by creating some smaller districts which would provide opportunities for the smaller companies with the limited resources they may have. This concern can also be mitigated by limiting how many districts one company could be awarded. As evidenced by the Community Input received from the July 2014 community meeting, there was significant from County residents to a trash collection contracting system.

## **C Public Operation**

Under this alternative, residential waste and recycling collection would be accomplished by County staff and resources.. There are many similarities between this system and the contracting system with the exception that the County would perform the work with its own staff and resources.

### **i. Advantages**

This alternative provides the most control for the County and allows for a turn-key program. In

addition, the costs of the public operation would not include overhead and profit as with the contracting system.

Public operation systems are well suited to towns and cities with a small defined urban area.

## **ii. Disadvantages**

Significant capital and operational costs would be expended in equipment, staff, facilities, operational and maintenance costs. These costs would include commitments to purchase a significant fleet of trucks, construction of a fleet maintenance shop, employee facilities, and property acquisition to site the new facility.

The trash collection contracting systems typically will allow for lower labor rates and payroll burden than that of County forces and usually will result in overall lower program costs compared to a public operation.

### **1.3.2 Evaluation of the Existing Collection System**

The collection of waste and recyclables currently falls under the free enterprise system. All of the different collection systems presented above are being utilized by governmental agencies in Harford County. Harford County Government has adopted the free enterprise system. The Town of Bel Air and the City of Aberdeen perform waste and recycling collection on their own under the public operation system, while the City of Havre De Grace utilizes the contracting system.

As a result of its close alliance with private businesses and its current philosophy of encouraging a free enterprise system, Harford County Government will continue with a free enterprise system for the collection of trash and recyclables. Consideration of other alternatives would only occur if changes in the regulatory environment necessitate such changes.

## **1.4 County-Provided Solid Waste Disposal Systems**

### ***1.4.1 HWDC Landfill***

#### **A. General**

A sanitary landfill contains compacted solid waste within an enclosed lined area to minimize potential adverse environmental impacts. All landfills within Maryland must satisfy requirements established for construction, operation, maintenance, expansion, modification, and closure as stipulated by MDE.

Despite environmental and public concerns associated with landfills, every integrated waste management system must have access to a landfill. Recycling, composting, and material separation and removal can divert significant portions of the waste stream from final disposal, but not all materials are recyclable or can easily, effectively, and cost efficiently be removed from the waste stream.. Combustion of solid waste significantly reduces waste volumes, but even the most advanced facilities must dispose of ash residues. Also, waste may need to be disposed of during plant shutdowns.

Today, sanitary landfills are significantly more sophisticated than the open dumps of the past. Current landfills use a variety of specific technologies and practices including:

- Geosynthetic liner systems;
- Leachate collection and removal systems;
- Leachate treatment and disposal systems;
- Closure techniques which reduce the amount of leachate generation;
- Gas collection, venting, and monitoring systems;

- Provisions for closure and post-closure care and maintenance;
- Ground and surface water monitoring systems;
- Monitoring and control of materials entering the site; and
- Operational techniques for the control of sediment and erosion, vectors, etc.

#### **B. Evaluation of the HWDC Landfill**

The Harford Waste Disposal Center (HWDC) is the only sanitary municipal landfill currently operating in the County. Without continued operation of the HWTEF or use of other disposal facilities, the existing constructed cells and other permitted cells which have not yet been constructed result in a projected useful life ending in 2025. This life is inadequate to solve the County's long-term solid waste disposal needs. Further expansion of the HWDC requires the acquisition of significant additional land within a residential community. Due to the proximity of homes and the associated siting concerns expressed by the public in rural areas of the County, coupled with the heavy truck traffic that accompanies landfill operations, constructing a landfill expansion or placement of a new landfill becomes nearly impossible.

#### ***1.4.2 Harford Waste-to-Energy Facility (HWTEF)***

The HWTEF, which was purchased by the Northeast Maryland Waste Disposal Authority on behalf of Harford County in 2002, is a modular facility that generates steam as a byproduct of waste combustion.

The HWTEF was designed to be readily expanded by the addition of a fifth combustion unit within the existing enclosure, which would be integrated with the existing major equipment. The largest

single combustion unit that could be fit into the available facility has a rated capacity of 150 TPD, which would increase the facility's overall throughput to 510 TPD, or 167,500 tons per year (TPY) of processing capacity. This capacity will not meet Harford County's demands for future solid waste processing. The existing combustion and process equipment will approach its projected service life in 2016, suggesting that system upgrades would be necessary in order to continue its operation for another 10 years. Beyond this timeframe, significant components of the facility would require replacement. The capital cost to make these further upgrades and equipment replacements would likely far outweigh the benefit to operate a facility which only serves a portion of the County's solid waste disposal needs and a portion of the energy needs of the Edgewood Area of APG.

Ash from the HWTEF is currently disposed of at a Baltimore City landfill as well as at the HWDC landfill. In accordance with EPA guidance, residue from municipal waste combustors in Maryland is acceptable for disposal at a permitted municipal solid waste landfill. The ash residue from the HWTEF is sampled and tested in accordance with a sampling and analysis plan approved by MDE, and has been classified as non-hazardous.

## **1.5 County-Provided Recycling Disposal Systems**

### ***1.5.1 HWDC Recycling Transfer Station***

Single stream recyclables which are collected by curbside collection services and which are dropped off by residents at the HWDC Recycling Center are brought to the HWDC recycling transfer station. This facility was constructed in 1998 as a temporary facility and remains in service. It consists of an asphalt tipping floor where the recyclables are unloaded. The material is then loaded onto 100 cubic yard tractor trailers. Two truck bays are provided for loading operations. The trailers then haul the recyclables to the Baltimore County Material Recovery Facility (MRF) in Cockeysville, Maryland. The transfer station is an open-air facility and is surrounded by litter fencing. The transfer station has no truck queuing capacity and is currently not adequate to handle the volume of truck traffic and quantity of material received. It also does not meet current day standards for transfer facilities which

include full containment of the operations within a building. Additionally, in 2014 one of the two truck loading bays had to be taken out of service due to concerns with a retaining structure. Due to the above problems, this facility is unable to meet the County's long-term needs..

### ***1.5.2 Yard Trim Facilities***

The HWDC Yard Trim acceptance and processing facility and the Tollgate Yard Trim acceptance facility have limited space at each respective location for future expansion. The 11 acre pad at the HWDC facility contains a customer unloading area, an equipment and fuel storage area, personnel building, incoming material storage area, material grinding areas, windrow processing areas, and finished product storage areas. Currently, this facility is able to satisfactorily turn-over its inventory up to 45,000 tons per year within a 12-month period. This is primarily due to the free pick-up offered to residents and below-market bulk sales rate. However, this cost model is not sustainable in the long-term as the revenues from this program inadequately support program expenditures. Due to topographic site constraints, buffer requirements, and environmental constraints there is no room to expand this facility at its current location to accommodate future growth.

The Tollgate Yard Trim acceptance facility also has significant site constraints which limit the ability to expand significantly. Concerns with this facility include a congested customer unloading area and an inefficient traffic flow pattern. On Saturdays, during the busy seasons, well over 1000 residents will visit this facility. As a result, this facility is limited to only receiving residential customers in cars, pick-ups, and trailers due to site constraints. Woody vegetation is ground on site and loaded onto trucks to be hauled to the HWDC Yard Trim facility for processing. Leaves and grass clippings are directly loaded and hauled to the HWDC Yard Trim facility for processing. In 2008, plans were developed to expand the customer unloading areas and to provide a more efficient traffic pattern. Budgetary constraints have prevented this expansion from moving forward.

Due to the need for additional yard trim processing and handling capabilities to handle future growth, a second yard trim acceptance and processing facility should be considered during the next planning period. In fact, the 2014 phone survey indicated that residents in the central and southern portions of

the County would like to have a yard trim facility that is more convenient to them.

### ***1.5.3 Homeowner Convenience Drop-off Facilities***

Homeowner drop-off facilities which accept recyclables are discussed in Chapter 3.

## **1.6 Food Waste Collection and Composting**

Many State and Federal agencies believe it is advantageous to plan for food waste collection and composting in the future to increase the quantities of recyclable materials diverted from the waste stream. The Maryland Department of the Environment December 2014 Zero-Waste Plan proposes food waste diversion goals and objectives. These proposals have not first considered exhausting all efforts with single stream recycling in the residential and commercial sectors. Many governmental agencies across the Country have first mandated recycling either before or concurrent with a food waste collection program. This section discusses the processes necessary to collect and process food waste into a recyclable product as well as the advantages and disadvantages.

According to the USEPA, approximately 14.5% of the total waste stream (recyclables included) consists of food waste which is food that is discarded or unwanted. This waste consists of organic material that is biodegradable such as fruit and vegetable matter and meats. The origin of food waste can be from spoiled or rotten food, food preparation, uneaten food, and discarded food. Theoretically, this material could be diverted from the waste stream, collected separately, and co-composted with yard trim to produce compost.

Currently there are no public or private large-scale food waste composting operations in Maryland. Some local Counties have begun pilot programs which receive material from a limited portion of their residents. Those Counties which have begun the pilot programs were able to incorporate their collection efforts into their existing yard trim collection program. Some companies and institutions have developed their own food waste composting programs which serve their own needs. There are no current facilities close-by within the Maryland and Delaware area. In 2014, the State of Delaware

rescinded the license of the Peninsula Compost Group which operated a 400 ton per day food waste composting facility in Wilmington, Delaware. This facility was shut down due to non-compliance issues and public nuisance complaints on odors. A privately run small-scale food waste composter, Veterans Compost, in Harford County operates a facility on farmland in Aberdeen. This facility collects food waste from some regional schools, restaurants, and institutions.

Food waste composting would require the establishment of a new residential collection system. Food waste would have to be placed in a cart separate from solid waste and recyclables. Placing the food waste in bags would not be permissible as the bags would foul up the compost processing equipment and operations. Compostable bags are manufactured with limited stores offering them locally. However, these bags can take more time to compost than the time it takes to process compost from food waste. Therefore food waste would likely have to be placed loosely in the resident's carts, or wrapped in paper sacks or newspaper. Combining and comingling yard trim with food waste for the collection process would be a consideration. Residents who subscribe to a curbside collection service would have three pick-ups each week, one each for trash, single stream recycling, and food waste.

The Maryland Department of the Environment recently promulgated new regulations governing the processing and composting of food waste within COMAR Section 26.04.11. These regulations establish siting and design requirements, as well as operational reporting, and record keeping requirements. Elements of these regulations include the following:

- An all-weather pad such as asphalt or concrete overlain an impermeable lining system with a permeability of  $1 \times 10^{-5}$  cm/s
- All stormwater in contact with the feedstock shall be diverted to specific storage facilities and stormwater shall be either re-used in the composting process or undergo process treatment to meet the conditions of the NPDES discharge limitations. The containment system for this stormwater shall have an impermeable lining system of  $1 \times 10^{-7}$  cm/s, equivalent to a municipal landfill lining system.
- Procedures for the monitoring of oxygen, temperature, pH and other parameters to ensure complete pathogen destruction. These procedures would likely require the installation and

maintenance of sophisticated automated computerized monitoring systems, coupled with sophisticated underground aeration systems which supply oxygen to the active compost windrows.

- The regulations would most certainly require the construction of a transfer station building which would receive the incoming food waste and yard trim. Equipment would be used to mix the materials within the building to attain the proper carbon-to-nitrogen ratios before it is passed through grinders which would grind the blended material within the building before it would be placed in windrows. All material received within any given day would have to be completely processed and placed into a windrow in that same day.
- Odor controls would be required to prevent nuisance odors.

Food waste composting requires the mixing and blending of food waste with yard trim such as leaves, grass clippings and ground woody vegetation (ie. mulch). Food waste may include but not be limited to meat, fruit and vegetable matter, paper products including napkins, paper towels, pizza boxes, and other biodegradable materials. The end product is similar to that as compost made exclusively from yard trimmings.

In food waste composting, the material is collected from homes, businesses, and institutions.

The organics must be processed through a grinder and mixed, according to a pre-determined formula, before being placed in windrows. Similar to the existing composting process utilized at the HWDC, static windrow composting requires a prepared hard surface with drainage and a windrow turner. In-Vessel composting or aerated piles/windrows require blowers and piping throughout the windrows to provide positive or negative air pressure and filters to reduce odors.

Temperature, moisture, pH, and oxygen are monitored over a period of time to ensure that an optimum composting environment is maintained and that the final material meets Federal and State time/temperature requirements. The composting process takes between 30 and 90 days based on the source material and the composting technology used. The cured compost is then screened to meet particle size requirements and to further remove plastics and other contaminants.

Costs for composting of organics vary widely based on the technology used, the volume of material to be processed and capital investments for the composting site and equipment. Howard County, which has a comparable amount of solid waste and yard trim as Harford County, has estimated it would cost over \$12.5 million (2014 dollars) to construct and equip a full-scale food waste composting facility that could process up to 28,000 tons of compost per year. This cost does not include the annual operating expenses.

**a. Advantages**

Removal of organics from the waste stream serves to capture valuable nutrients and reduce the volume of material going to other disposal facilities. Food waste diversion would also reduce the amount of methane produced from landfills, thus lowering methane emissions which are more harmful than carbon dioxide emissions. Carbon dioxide is a by-product of the composting process. With an organics program in place that included food waste, the County would realize a higher recycling rate.

**b. Disadvantages**

The addition of food waste in the residential collection program will require significant effort on the part of the homeowner with respect to separation of food waste, storage space for a third collection cart, chance of significant odors during the warmer months, and the additional cost for a third weekly pick-up. In addition to these costs there would be an increase in truck traffic on County roads due to an additional pick-up each week.

The siting of a food waste composting facility would be virtually impossible within Harford County due to the limited availability of large land parcels within industrially-zoned areas. Such a facility would require a location far isolated from any commercial and residential developments due to the potential for significant odors caused by such operations. Operational upsets will occur at the best run operations. Such upsets cause foul odors which can travel great distances. An example of this

problem has been experienced by the Peninsula Compost Group in Wilmington.

Food waste composting would increase the quantities of compost available for sale. However, as more and more additional public and private organizations construct and operate these facilities a market saturation of compost could occur. Market saturation would require the lowering of compost prices and thus depress sales revenues. There are limitations on the demand for compost locally. The new compost regulations require an annual turnover of product. If market saturation occurs, some organizations may have to pay enormous costs to have the material hauled out of State.

### **c. Evaluation**

Food waste composting at the local level would not result in an efficient program. In order to be efficient and to recover the capital and operating costs, a facility needs to be large enough to handle a region. Due to the concerns with lack of available land located at appropriate locations within the County and concerns with odors, Harford County will not pursue a County-owned and maintained facility. Instead, it should consider opportunities with other neighboring jurisdictions or with a private company. The County will not support State initiatives with food waste collection and composting if mandatory recycling is not first implemented with sufficient time to review its success. If food waste diversion is mandated legislatively by the General Assembly or otherwise would reduce the County's cost of waste disposal, the alternatives previously described above would be pursued.

## **2. Special Waste Management**

Special waste management requirements for construction and demolition debris, fluorescent lights, asbestos, special medical waste and hazardous waste will be discussed in this section.

### **2.1 Construction and Demolition Disposal**

Construction and demolition (C&D) material may include but is not necessarily limited to land clearing debris, demolition debris, construction debris, and asbestos. Various possible options for the

disposal and/or processing of C&D include (1) siting and constructing a County-owned but privately operated rubble landfill; (2) siting and constructing a County-owned and operated rubble landfill; (3) a County-owned and operated C&D processing and recycling facility; (4) a privately-owned and operated rubblefill; and (5) a privately-owned and operated C&D processing and recycling facility. Processing and recycling C&D includes the separation of mixed waste and reuse of various materials such as rock, concrete, asphalt, wood, cardboard and gypsum. The County no longer has any C&D disposal facilities located within its jurisdictions. The closest disposal facilities available to County residents and businesses include the Honeygo Reclamation Facility and Days Cove Landfill both of which are in White Marsh. The location of these facilities is inconvenient for County residents, building contractors and demolition contractors. The need exists for a C&D disposal facility within the jurisdictional boundaries of the County.

A C&D Recycling facility requires a system of sorting, screening, grinding, and baling. Hand sorting and picking of the mixed waste stream is the most prevalent methodology employed. An enclosed warehouse-type building facilitates sorting and allows efficient year-round operation. The facility can establish a reduced tipping fee for waste that is source-separated by the contractor, and deposited in separate containers or bins at the facility.

Wood wastes make up a significant component of C&D, including pallets, stumps and brush from land clearing operations, and building demolition debris. Large tub grinders, and waste recyclers (wood chippers), are often employed to reduce these wastes to wood chips for marketing. Chips can be marketed as fuel, mulch, and animal bedding. Depending on the market, painted or treated wood, plywood and particle board may be excluded from the chipping operation. In addition, magnetic separation of metal wastes (e.g., nails from pallets) is often employed.

Paper wastes are primarily corrugated materials that can be baled and readily marketed after separation from the mixed waste stream. Contaminated and plastic-coated cardboard must be excluded.

Asphalt roofing wastes potentially have a high resale value due to high percentage of petroleum; however, recycling has not been widespread in the Mid-Atlantic area due to contaminants such as

paper backing, stone, and gutter scraps. Currently, processing of asphalt shingle wastes is available by five companies located in Maryland. Materials are used to manufacture road paving products and other asphalt products. Sorted shingles and aggregate are mixed, reduced in volume, and passed over magnets to remove metal impurities.

Metal waste is separated into the various types (e.g., ferrous, aluminum, copper, etc.) and marketed to scrap metal dealers. The scrap metal is used to manufacture new metal products.

The volume of concrete in rubble is highly variable. Waste concrete can be crushed then passed over electromagnets to remove wire mesh and rebar which can be marketed to scrap dealers. Crushed concrete can be used as aggregate which can be used in a variety of ways such as septic tank drain fields, driveways, pipe bedding and landfill cover.

Plastic materials are shredded or crushed, depending on the market, and used to manufacture new plastic products.

Other products recovered from the C&D debris include the following:

- Bricks - crushed and used as aggregate or ornamental stone
- Carpet – carpet nap can be shaved and recycled into plastic products
- Glass - ground and used to manufacture fiberglass insulation, for sand blasting, or asphalt aggregate
- Gypsum wallboard - crushed and used as agricultural gypsum, wallboard, or cat litter
- Porcelain - crushed and used as concrete aggregate

- Tires - shredded and used in roadways, to manufacture rubber products (e.g., bumpers, mudflaps, car mats, shoes, gloves)

## **2.2 Asbestos**

Asbestos waste is generated from the rehabilitation and demolition of structures containing asbestos materials. Although, the HWDC Refuse Disposal Permit allows disposal of non-friable asbestos within the landfill, in the 1990's the Harford County Council decided that it did not want to bury that waste type within the County landfill. This policy has been in place ever since. Harford County accepts items containing non-friable asbestos at the HWDC by appointment only. The resident must first double bag the material and secure the bags with duct tape. The material is then loaded into a covered and locked roll-off bin. Once full, the asbestos is transported to the Baltimore County Eastern Sanitary Landfill (ESL), in White Marsh where it is disposed of. Harford County intends to continue this practice in the future.

## **2.3 Special Medical Waste**

The County is not permitted to accept, and does not accept, special medical wastes, including infectious and/or biohazardous medical waste, at the HWDC or HWTEF.

The management of special medical waste is not under the jurisdiction of the County and will not be addressed in this plan; management of these wastes is strictly regulated by the MDE under specific medical waste regulations.

## **2.4 Hazardous Waste**

The County does not accept hazardous substances for disposal at the HWDC or HWTEF, other than small quantities of household hazardous wastes that are generally recognized to occur in the residential waste stream. Currently, hazardous waste generators within the County contract with a licensed hauler of hazardous waste for collection and disposal.

The management of hazardous waste is not under the jurisdiction of the County and will not be addressed in this plan. Hazardous waste storage, transport and disposal is strictly regulated by the MDE.

## **2.5 Household Hazardous Waste**

Historically, Harford County has held a household hazardous waste collection day twice each year for County residents in cooperation with Maryland Environmental Service. To be accepted, all items must be in containers with quantities of quantities normally found in retail stores. Items accepted include oil-based paint and stain, herbicides, pesticides, mercury thermometers, mercury containing thermostats, fluorescent light tubes and CFLs, pool chemicals, caustic cleaners, acid, and other items. Harford County intends to continue to offer this service to residents in the future.

## **2.6 Electronics Recycling (eCycling)**

The proliferation of computer and consumer electronics has resulted in continued growth in this portion of the U.S. waste stream. Electronic recyclables include computers, non-CRT computer monitors, computer peripherals, non-CRT televisions, stereophonic equipment, VCRs, DVRs, cell phones, and similar electronic products. Harford County has a contract in place with an eCycling vendor and disposed of 157.25 tons of material in 2012. Harford County intends to continue to offer this service to County residents and businesses in the future.

## **2.7 Emergency Response for Hazardous Waste Spills**

Harford County Emergency Operations Services operates a hazardous material response team (HAZMAT team) based at the Emergency Operations Center in Hickory. The HAZMAT team is trained and equipped to respond to level one (the highest level) hazardous and/or toxic waste spills and leakages that occur in the County. Aberdeen Proving Ground has a hazardous waste unit for responding to spills on the APG facility.

The HAZMAT team procedure is to contain or control spills or leakages of hazardous or toxic materials to minimize the danger to public health and the environment. The responsible party (hazardous materials generator) is required to contract with a private hazardous waste remediation company for the ultimate clean-up and disposal of the material. If the responsible party cannot be determined, the Maryland Department of the Environment is contacted to implement the remediation measures.

### **3 Constraints on New Solid Waste Acceptance Facilities**

#### ***3.1 Physical Constraints on Waste Acceptance Facilities***

Several physical characteristics of the land in Harford County influence the siting of new solid waste acceptance facilities. These constraints include topography, soil types, geologic conditions, aquifers, wetlands, surface waters, existing water quality, land uses, planned long-term growth, and critical areas.

These constraints, and their potential impact on siting, designing, permitting and operating solid waste facilities, will be addressed in detail below.

#### ***General Topography and Physiography***

Harford County can be characterized as two provinces, with a transition zone between: the Piedmont Plateau in the northwestern portion of the County and the Coastal Plain located in the southeastern portion of the County. The transition between is described as the Fall Line or Fall Zone.

Surface elevations vary from more than 700 feet in western portions of the County to approximately 0 (sea level) along the shoreline of the Chesapeake Bay.

The valleys formed by the major drainage ways in the Piedmont are characteristically steep sided. The stream courses are straight and have steep gradients. Hard crystalline bedrock outcrops exist in the stream channels and commonly along the sides of the steeper valleys.

The Piedmont section of the county drains into the Chesapeake Bay via the Gunpowder River, Winters Run, Bynum Run and James Run and drains to the Susquehanna River via Deer Creek and Broad Creek.

The topographic setting of the Fall Zone is characterized by gently rolling terrain deeply incised by the drainage ways. Within this region the streams flowing down from the Piedmont abruptly change gradient, forming falls, as the bedrock of the Piedmont dips easterly beneath the sedimentary deposits of the Coastal Plain.

The Coastal Plain occurs southeast of the Fall Zone and is characterized by broadly rolling hills and plains traversed by tidally influenced streams and rivers. The southeastern boundary of this province in Harford County is the Chesapeake Bay. The margin of the bay varies from low bluffs to tidal marshes.

Sites with suitable topography for solid waste management facilities may be found throughout Harford County, provided that the site selection criteria and development plans are well conceived.

### ***Soil Types and Engineering Characteristics***

The soils of Harford County can be distinguished based on the physiographic region of the County: Piedmont Plateau, Atlantic Coastal Plain, and Flood Plains and Low Terraces. The *Soil Survey of the Harford County, Maryland Area*, published by the U.S. Department of Agriculture, describes the soil types and is the basis of the following descriptions. Particular soil types are grouped into associations based upon similarity of physical characteristics.

**Piedmont Plateau**

- Manor-Glenelg Association
- Chester-Glenelg-Manor Association
- Elioak-Glenelg Association
- Glenelg-Manor Association
- Whiteford Association
- Nashaminy-Aldino-Watchung Association
- Montalto-Nashaminy Association
- Legore-Nashaminy-Aldino Association

**Atlantic Coastal Plain**

- Neshaminy-Chillum-Sassafras Association
- Beltsville-Loamy and Clayey land-Sassafras Association
- Matapeak-Mattapex Association

**Flood Plains and Low Terraces**

- Elsinboro-Delanco Association
- Codorus-Hatboro-Alluvial land Association

**Soils of the Piedmont Plateau**

The soils in the eight associations in this group formed mainly in residuum that weathered in place from acid or basic rocks. They are nearly level to steep. Some of the steep soils are very stony.

*Manor-Glenelg Association*

This association is characterized by deep, steep to gently sloping, somewhat excessively drained and well drained soils that are underlain by acid crystalline rocks, and is found on uplands.

This association is mainly a hilly upland that is thoroughly dissected by streams. Most of the steeper areas, particularly the bluffs along streams, are stony. This association, the largest in the County, makes up about 23 percent of the total acreage. It is 50 percent Manor soils, 30 percent Glenelg soils, and 20 percent less extensive soils.

Manor soils are well drained to somewhat excessively drained and are loamy throughout. They overlie acid crystalline rock at a depth of about 6 to 10 feet. They are gently sloping to steep and generally are on the higher parts of the landscape.

Glenelg soils are well drained and loamy throughout. They overlie acid crystalline rock at a depth of 4 to 10 feet. They are gently sloping to strongly sloping and generally are on the lower, less sloping parts of the landscape. Less extensive in this association are Chester, Brandywine, Glenville, Codorus, Baile, and Hatboro soils and Stony land, steep. Chester and Brandywine soils are mainly on ridge tops and upper slopes. Glenville and Baile soils generally are in draws and around the heads of drainage ways. Codorus and Hatboro soils are on flood plains. Stony land, steep, is generally on bluffs above streams.

About 90 percent of the association is moderately to severely eroded.

#### *Chester-Glenelg-Manor Association*

This association is characterized by deep, nearly level to steep, well drained and somewhat excessively drained soils that are underlain by acid crystalline rock and is found on uplands having broad ridge tops.

This association is a rolling, strongly dissected upland that has broad ridge tops. It makes up about 15 percent of the County. It is about 55 percent Chester soils, about 20 percent Glenelg soils, about 10 percent Manor soils, and about 15 percent less extensive soils.

Chester soils are well drained and are loamy throughout. They overlie acid crystalline rock at a depth of about 5 to 10 feet. They are nearly level to strongly sloping and are on broad ridgetops and adjacent upper parts of slopes.

Glenelg soils are well drained and loamy throughout. They overlie acid crystalline rock at a depth of about 4 to 10 feet. They generally are gently sloping to moderately sloping and are on the lower parts of the landscape.

Manor soils are well drained to somewhat excessively drained. They are loamy material that overlies acid crystalline rock at a depth of about 6 to 10 feet. They are gently sloping to steep and generally are on the higher parts of the landscape.

Less extensive in the association are Glenville, Baile, Codorus, and Hatboro soils. Glenville and Baile soils generally are in draws and around heads of drainage ways. Codorus and Hatboro soils are on flood plains.

The major soils of this association have few limitations except those imposed by slope and the hazard of erosion.

#### *Elioak-Glenelg Association*

This association is characterized by deep, gently sloping to strongly sloping, well-drained soils that are underlain by acid crystalline rock, and is found on uplands having broad ridge tops.

This association is mostly a rolling, strongly dissected upland that has broad ridge tops. It makes up about 2 percent of the total County. It is 70 percent Elioak soils, 25 percent Glenelg soils, and 5 percent less extensive soils. Elioak soils are well drained. They have a loamy surface layer and a loamy to clayey subsoil. They are underlain by acid crystalline rock at a depth of about 5 to 10 feet. These soils are gently sloping and moderately sloping and are on broad ridge tops and adjacent upper parts of slopes.

Glenelg soils are well drained and are loamy throughout. They overlie acid crystalline rock at a depth of about 4 to 10 feet. They are gently sloping to strongly sloping and generally are on the lower parts of the landscape. Less extensive in this association are Chester and Manor soils. Chester soils are mainly on broad ridge tops. Manor soils generally are on the higher, steeper parts of the landscape.

Erosion is the major limitation. Most of the association is moderately to severely eroded.

#### *Glenelg-Manor Association*

This association is characterized by deep, gently sloping to steep, well drained and somewhat excessively drained soils that are underlain by acid crystalline rock, and is found on uplands.

This association is mostly a rolling to hilly upland that is thoroughly dissected by streams. Most of the steeper areas, particularly the high cliffs and bluffs along streams, are stony. This association makes up about 9 percent of the total acreage of the County. It is 55 percent Glenelg soils, 30 percent Manor soils, and 15 percent less extensive soils.

Glenelg soils are well drained and are loamy throughout. They overlie acid crystalline rock at a depth of about 4 to 10 feet. They are gently sloping to strongly sloping and are on the lower parts of the landscape.

Manor soils are well drained to somewhat excessively drained and are loamy throughout. They overlie acid crystalline rock at a depth of about 6 to 10 feet. They are gently sloping to steep and generally are on the higher parts of the landscape.

Less extensive in this association are Chester, Elioak, Brandywine, Codorus, Hatboro, and Comus soils and Stony land, steep. Chester and Elioak soils generally are on the crests of broad ridge tops. Brandywine soils generally are on sides and crests of some of the steeper hills of the association. Codorus, Hatboro, and Comus soils are on flood plains. Stony land, steep, generally

is on high bluffs and cliffs along major streams.

Erosion is the major limitation. In some areas stoniness is a limitation.

About 85 percent of this association is either moderately or severely eroded.

#### *Whiteford Association*

This association is characterized by moderately deep to deep, gently sloping and moderately sloping, well-drained soils that are underlain by acid slate bedrock, and is found on uplands having broad ridge tops.

This association is a gently rolling upland that has extensive broad ridge tops. It is unique in that it is the only association in the County that is underlain by slate bedrock. This association, the smallest in the County, makes up less than 1 percent of the total acreage. It is about 95 percent Whiteford soils and about 5 percent Chester and Glenelg soils.

Whiteford soils are well drained and are loamy throughout. They overlie acid slate bedrock at a depth of about 3 to 5 feet. They are gently sloping and moderately sloping and are on broad ridge tops.

Chester soils generally are on broad ridge tops. Glenelg soils generally are on the steeper or more rolling parts of the landscape.

Slope and the hazard of erosion are the major limitations. Flat slate fragments on the surface interfere with tillage in places. Some land, mostly around slate quarries, is idle. All of the quarries have been abandoned and are reforesting. High piles of slate near the quarries are features characteristic of the landscape.

*Neshaminy-Aldino-Watchung Association*

This association is characterized by deep, steep to nearly level, well drained to poorly drained soils that are underlain by basic, semibasic, or mixed basic and acidic rocks, and is found on uplands having many broad flats.

This association is a rolling to hilly upland that has many broad flats and depressions. The association makes up about 20 percent of the total acreage of the County. It is 25 percent Neshaminy soils, 20 percent Aldino soils, 15 percent Watchung soils, and 40 percent less extensive soils.

Neshaminy soils are deep and well drained and are loamy throughout. They overlie semibasic or mixed basic and acidic rock at a depth of about 4 to 10 feet. They are nearly level to steep and generally are on the higher parts of the landscape.

Aldino soils are moderately well drained soils that are loamy throughout. They are moderately deep over a fragipan and are underlain by basic rock at a depth of about 3-1/2 to 6 feet. They generally are nearly level to moderately sloping and generally are on the lower parts of the landscape.

Watchung soils are deep and poorly drained. They have a loamy surface layer and a dominantly clayey subsoil. They overlie basic rock at a depth of about 5 to 10 feet. They are nearly level to gently sloping and generally are on flats or in depressions.

Less extensive in this association are Montalto, Kelly, Chrome, Legore, Chillum, Hatboro, Codorus, and Comus series and Stony land, steep. Montalto, Kelly, and Chillum soils generally are nearly level to moderately sloping. Legore soils generally are moderately sloping to strongly sloping. Chrome soils are on sides of high ridges. They have a sparse stunted plant cover because they are only moderately deep over serpentine bedrock. Stony land generally is on high bluffs or cliffs above streams. Hatboro, Codorus, and Comus soils are on flood plains.

Erosion and stoniness in the higher, steeper areas are major limitations. Drainage is a major limitation on the flats and in depressions.

*Montalto-Neshaminy-Aldino Association*

This association is characterized by deep, steep to nearly level, well drained and moderately well drained soils that are underlain by basic, semibasic, or mixed basic and acidic rocks, and is found on uplands.

This association is mainly a rolling, dissected upland that is hilly in places. It makes up about 5 percent of the County. It is about 45 percent Montalto soils, 15 percent Neshaminy soils, 15 percent Aldino soils, and 25 percent less extensive soils. The deep, well-drained Montalto soils have a loamy surface layer and a dominantly clayey subsoil. They overlie basic rock at a depth of about 5 to 12 feet. They are mostly nearly level to moderately sloping and generally are on the lower parts of the landscape.

The well-drained Neshaminy soils are deep and are loamy throughout. They overlie semibasic or mixed basic and acidic rock at a depth of about 4 to 10 feet. They are nearly level to steep and generally are on the higher parts of the landscape. Aldino soils are moderately well drained and are moderately deep over a fragipan. They are loamy throughout and overlie basic rock at a depth of about 3-1/2 to 6 feet. They are nearly level to moderately sloping and generally are on the lower parts of the landscape.

Less extensive in this association are Watchung, Chrome, Kelly, Legore, Delanco, Elsinboro, Hatboro, Codorus, and Comus soils. Watchung soils generally are on flats or in depressions. Chrome soils are on sides of highly dissected ridges. Kelly soils are gently sloping to moderately sloping. Legore soils are nearly level to steep. Delanco and Elsinboro soils are on low terraces along streams. Hatboro, Codorus, and Comus soils are on flood plains.

Erosion and stoniness are major limitations. Drainage is a limitation in some of the nearly level areas and in depressions.

*Legore-Neshaminy-Aldino Association*

This association is characterized by deep, nearly level to steep, well drained and moderately well drained soils that are underlain by basic, semibasic, or mixed basic and acidic rocks, and is found on uplands.

This association is a rolling to hilly dissected upland. It makes up about 2 percent of the County. It is about 40 percent Legore soils, 25 percent, Neshaminy soils, 20 percent Aldino soils, and 15 percent less extensive soils.

Legore soils are deep and well drained and are loamy throughout. They overlie basic rock at a depth of about 5 to 10 feet. They generally are gently sloping to steep.

Neshaminy soils also are deep and well drained and are loamy throughout. They are nearly level to steep and overlie semibasic or mixed basic and acidic rock at a depth of about 4 to 10 feet.

Aldino soils are moderately well drained and are loamy throughout. They are moderately deep over a fragipan and are underlain by basic rock at a depth of about 3-1/2 to 6 feet. They generally are nearly level to moderately sloping.

Less extensive in this association are Watchung, Montalto, Hatboro, Codorus, and Comus soils and Stony land, steep. Watchung soils generally are on upland flats and in depressions. Montalto soils are nearly level to gently sloping and are on uplands. Hatboro, Codorus, and Comus soils are on flood plains. Stony land, steep, generally is on high cliffs or bluffs above the major rivers.

Stoniness and steepness are major limitations. Erosion is also a limitation in places.

## **Soils of the Atlantic Coastal Plain**

The soils in the three associations in this group formed mainly in thick deposits of Coastal Plain sediments. They are nearly level to steep, and some are sandy and gravelly. The Neshaminy-Chillum-Sassafras association is made up of both Coastal Plain and Piedmont soils, but is dominantly Coastal Plain soils and, thus, is grouped with those soils.

### *Neshaminy-Chillum-Sassafras Association*

This association is characterized by deep, nearly level to steep, well-drained soils that are underlain by semibasic or mixed basic and acidic rocks or sandy and gravelly Coastal Plain sediment, and is found on uplands.

This association is undulating to hilly on the Piedmont uplands and undulating to rolling on uplands of the Coastal Plain. Some areas on the Coastal Plain are broad and smooth. In many areas this association straddles the Fall Line between the Piedmont Plateau and the Coastal Plain. It makes up about 2 percent of the County. It is 30 percent Neshaminy soils, 20 percent Chillum soils, 20 percent Sassafras soils, and 30 percent less extensive soils.

Neshaminy soils are deep, well-drained loamy soils that overlie semibasic or mixed basic and acidic rock at a depth of about 4 to 10 feet. They are nearly level to steep and generally are on the highest parts of the landscape.

Chillum soils are well-drained loamy soils that are moderately deep over a hard gravelly layer and are underlain by gravelly material at a depth of about 20 to 30 inches. They are gently sloping to moderately sloping and are on broad, smooth uplands or on somewhat hummocky uplands where slopes are short.

Sassafras soils are deep, well-drained loamy soils that are chiefly underlain by sandy material at a

depth of about 30 to 40 inches. They are gently sloping to steep. The landscape is dominantly undulating, but has some short, steeper slopes.

Less extensive in this association are Watchung, Legore, Montalto, Matapeake, Beltsville, and Elsinboro soils and Alluvial land. Watchung soils are on flats and in depressions. Legore and Montalto soils generally are on rolling to hilly parts of the uplands. Matapeake and Beltsville soils are on broad, smooth uplands. Elsinboro soils are on low terraces along streams. Alluvial land is on flood plains.

Erosion is a hazard in some parts.

*Beltsville-Loamy and Clayey land-Sassafras Association*

This association is characterized by deep, nearly level to steep, well drained and moderately well drained soils that are underlain by sandy, loamy, gravelly, or clayey sediment, and is found on uplands.

This association is a gently undulating to hilly upland. It makes up about 8 percent of the County. It is about 30 percent Beltsville soils, 30 percent Loamy and clayey land, 20 percent Sassafras soils, and 20 percent less extensive soils.

Beltsville soils are moderately well drained and moderately deep over a fragipan. They are loamy and overlie, at a depth of about 40 to 64 inches, older loamy sediment that is commonly gravelly. They are nearly level to moderately sloping and are mainly on smooth to undulating landscape.

Loamy and clayey land is deep and generally well drained. It is loamy and overlies older clayey deposits at variable depths. It is nearly level to steep and is mainly on hilly parts of the landscape.

Sassafras soils are deep and well drained. They are loamy and overlie dominantly sandy material at a depth of about 30 to 40 inches. They are gently sloping to steep and are on a landscape that is

dominantly undulating, but has some short steeper slopes.

Less extensive in this association are the Evesboro, Joppa, Keyport, Elkton, Fallsington, Chillum, Matapeake, Mattapex, Woodstown, Othello, and Leonardtown soils and Alluvial land. Evesboro and Joppa soils generally are in hilly areas in higher parts of the Coastal Plain. Elkton, Fallsington, Leonardtown, and Othello soils are on upland interfluvial flats. Keyport, Chillum, Matapeake, Mattapex, and Woodstown soils are nearly level to gently sloping and occupy undulating to broad, smooth parts of uplands. Alluvial land is on flood plains.

Poor stability of the soils in most areas is a major limitation. Steep cuts are extremely difficult to stabilize. Some areas are good sources of sand and gravel.

#### *Matapeake-Mattapex Association*

This association is characterized by deep, nearly level and gently sloping, well drained and moderately well drained soils that are underlain by sandy and loamy sediment, and is found on broad, smooth uplands.

This association is a broad, smooth upland. It makes up about 4 percent of the County. It is about 40 percent Matapeake soils, 40 percent Mattapex soils, and 20 percent less extensive soils.

Matapeake soils are deep, well-drained loamy soils that overlie dominantly sandy sediment at a depth of about 26 to 40 inches.

Mattapex soils are deep and moderately well drained. They are loamy and overlie older, coarser textured loamy sediment or sandy sediment at a depth of about 30 to 40 inches.

Both the Matapeake and Mattapex soils are nearly level to gently sloping.

Less extensive in this association are Othello, Keyport, Beltsville, Chillum, Sassafras, Elsinboro, and Delanco soils. Othello soils are on upland interfluvial flats. Keyport, Beltsville, and Chillum

soils are nearly level to gently sloping and are on undulating to broad, smooth parts of the uplands. Sassafras soils are on a dominantly undulating landscape that has some short steeper slopes. Elsinboro and Delanco soils are on low terraces along streams.

The major soils of this association have few limitations except those caused by slope and the hazard of erosion.

### **Soils of the Flood Plains and Low Terraces**

The soils in these associations formed mainly in alluvium that was washed down from upland areas of the Piedmont or Coastal Plain. These soils are nearly level to gently sloping.

#### *Elsinboro-Delanco Association*

This association is characterized by deep, nearly level and gently sloping, well drained and moderately well drained soils that are underlain by stratified alluvial sediment, and is found on low terraces.

This association consists mainly of low terraces along major streams on the Coastal Plain. It makes up about 4 percent of the County. It is about 30 percent Elsinboro soils, 30 percent Delanco soils, and 40 percent less extensive soils.

Elsinboro soils are deep and well drained. They are loamy and overlie old stratified loamy alluvial sediments at a depth of about 28 to 40 inches. They are 6 to more than 20 feet deep over bedrock. They are mainly nearly level to gently sloping.

Delanco soils are deep and moderately well drained. They are loamy and overlie old stratified loamy alluvial sediments at a depth of about 26 to 46 inches. They are 5 to more than 20 feet deep over bedrock. They are nearly level to gently sloping.

Less extensive in this association are Kinkora, Evesboro, Beltsville, Sassafras, Fallsington,

Chillum, Keyport, Othello, Matapeake, and Mattapex soils. Kinkora soils are on terraces along streams. Evesboro soils are moderately sloping and are on ridges in the uplands. Beltsville, Chillum, Keyport, Matapeake, and Mattapex soils are nearly level to gently sloping and are on undulating to broad smooth uplands. Sassafras soils are on mostly undulating to hilly uplands. Fallsington and Othello soils are on upland interfluvial flats.

Limitations on the major soils are mostly those caused by slope and the hazard of erosion. Some lower areas are flooded during extremely wet periods.

*Codorus-Hatboro-Alluvial land Association*

This association is characterized by deep, nearly level, moderately well drained to very poorly drained soils that are underlain by stratified alluvial sediment, and is found on flood plains.

This association consists of nearly level flood plains along the larger streams that drain the uplands of both the Piedmont Plateau and the Coastal Plain. It makes up about 5 percent of the County. It is about 35 percent Codorus soils, 30 percent Hatboro soils, 20 percent Alluvial land, and 15 percent less extensive soils.

Codorus soils are deep, loamy, moderately well drained to somewhat poorly drained soils that overlie stratified loamy alluvial sediments at a depth of about 3-1/2 to 5 feet. They are 6 to 10 feet deep over bedrock. They generally are on the flood plains that are closest to the streams.

Hatboro soils are deep and poorly drained. These loamy soils generally overlie stratified loamy alluvial sediments at a depth of about 40 to 60 inches. They are 4 to 10 feet deep over bedrock. They generally are on the flood plains farthest from the streams.

Alluvial land is somewhat poorly drained to very poorly drained. It generally is sandy and overlies stratified sediments at variable depths. It is most extensive on flood plains along streams that drain urban and suburban areas.

Less extensive in this association are Comus soils and Tidal marsh and Swamp. Comus soils generally are on the flood plain close to the streams. Tidal marsh borders Chesapeake Bay and parts of tidal streams and estuaries. Swamp is very wet land that remains under fresh water all, or nearly all, of the time.

Flooding is a major limitation.

Generally, soils from these areas suitable for use at the landfill include soils which are:

- Cohesive fine grained soils - these soils tend to slow the movement of water and leachate in the immediate vicinity of the landfill.
- Deep soil overburden – this soil tends to be easier to excavate and tends to be suitable as cover soil.
- Gentle foliated rock with few fractures – rock tends to slow the migration of groundwater.
- Low groundwater table with low permeability soils – these soils slow the movement of groundwater.

The properties of the soils on which a landfill is sited should be considered in planning, design, construction, operation, closure, and post-closure of the landfill. Soil characteristics such as soil texture, erodibility, load-bearing capacity, resistance to slide, permeability, water table elevation, and quantity should be addressed during the site selection process. Clayey, impermeable soils are desirable soils for the base of the landfill; however, landfill operations require a loamy or silty soil which is easily spread and compacted for cover material.

Soil types for other waste management facilities are those which can provide adequate support for buildings, structures, equipment or concrete pads. The location of specific soils types vary based upon site location. The soils types at a site proposed for development in support of this Solid Waste Management Plan will be evaluated on a site-by-site basis.

### ***Geologic Conditions & Location***

The physiographic provinces and soil types in Harford County are influenced by the underlying geologic conditions. The geologic formations underlying the Piedmont Plateau are predominantly folded and faulted metamorphic rocks of pre-Cambrian and Paleozoic age. Much of the rock is overlain by saprolite and residuals soils, except in stream valleys where younger sediments have accumulated. Historically there have been quarries in the County which extracted slate, soapstone, serpentinite and other metamorphic rocks. Two active quarries currently extract gneiss primarily for production of aggregate utilized in construction products.

The geologic formations underlying the Coastal Plain are unconsolidated sedimentary deposits of Cretaceous, Tertiary and Quaternary age. These sedimentary layers, which lie unconformably over the pre-Cambrian bedrock, occur as wedges of sands, silts and clays which dip and thicken to the southeast. Deposits of sand, clay and gravel have been extensively mined in the County in the past.

Solid waste management facilities can be developed in most geologic environments provided that proper engineering and site design practices are implemented. Although landfill facilities can be engineered to be environmentally protective in most geologic settings, it is desirable to have sites in areas in which geologic conditions provide backup attenuation capacity. Optimum geologic conditions for a landfill site include the lack of permeable fault zones underlying the site, and adequate depth to groundwater and bedrock (i.e., according to current regulations). Geologic conditions should be such that an effective groundwater monitoring system can be established.

### ***Aquifer Use & Conditions***

The Coastal Plain region of Harford County is underlain by three water bearing aquifers: the Patuxent, Patapsco and Pleistocene Deposits. Although several large well fields in the County draw water from the Patuxent and Patapsco formations, these aquifers are limited in thickness and extent in the County compared with the Pleistocene Deposits. The Pleistocene Formation is the most productive aquifer in

terms of water supply, with average yield of 100-250 gpm per well. The unconsolidated sediments of the Coastal Plain region serve as recharge sites for these aquifers. In the Piedmont, groundwater accumulates in fractures, joints and faults in the upper zone of the crystalline rock formation underlying the shallow soils. Recharge areas for the above aquifers are located primarily within Harford County.

Aquifer protection is an important consideration in siting solid waste management facilities. Accordingly, solid waste disposal facilities which may have the potential to impact groundwater quality should not be sited in close proximity to well fields or aquifer recharge zones. The process of siting, design and operation of any solid waste management facility should include consideration of the proximity to wellfields such as the Perryman well field as well as smaller well fields serving private communities (e.g., Whiteford, Delta/Cardiff, Greenridge, etc.).

All solid waste management facilities shall be planned, designed, constructed and operated to protect groundwater quality.

### ***Existing Wetlands***

Wetlands are unsuitable areas for siting solid waste management facilities. In no case should facilities be sited in tidal wetlands, as defined in Section 9-101 of the Natural Resources Article of the Annotated Code of Maryland, and the Harford County, Maryland Critical Area Management Program. In some cases, minor unavoidable impacts to non-tidal wetlands may be necessary to provide access for vehicles and utilities. Non-tidal wetlands are defined under COMAR 08.05.04.01(62). Construction activities in wetlands require Federal, State and local permits and approvals, and mitigation of unavoidable impacts.

### ***Surface Water Sources, Flood Plains and Watersheds***

Floodplains are not suitable sites for solid waste management facilities. RCRA Subtitle D Criteria requires that the owners or operators of new and existing municipal solid waste landfills located in the 100-year floodplain must demonstrate that such facilities will not adversely impair the flood-

protection functions of the floodplain or endanger human health or the environment.

Several surface water bodies in Harford County are used as sources of raw water for potable water supply systems. The sources include Winter's Run, Deer Creek, and the Susquehanna River. The selection of a site for a solid waste management system within the watershed for these systems must consider possible impacts to water quantity, and if necessary, provide environmental controls.

All solid waste management facilities shall be planned, designed, constructed and operated to protect surface water quality.

### ***Existing Water Quality***

The more heavily developed portions of Harford County, referred to as the "Development Envelope" and the incorporated municipalities, are primarily served by public or privately-owned water utility systems. These utilities rely upon both groundwater and surface water sources to meet the demands of their customers. The other portions of the County rely primarily on individual wells to supply residential and commercial needs. Generally surface water and groundwater supplies are of sufficient quality for potable use. In some areas groundwater has been impacted by release of fuel products and other manmade chemicals. §267-66 of the Harford County Zoning Code – Water Source Protection Districts – prohibit new or expanded sanitary or rubble landfills in areas designated on the Harford County Water Source Protection District map. This map includes the Perryman wellfield, Community water systems, and non-transient non-community water systems as mapped by MDE.

Winters Run, Deer Creek, and the Susquehanna River are used as surface water sources for the Town of Bel Air, Aberdeen Proving Ground, the City of Havre de Grace, and Harford County Department of Public Works, and Baltimore City. Siting, construction and operation of any solid waste management facilities within these watersheds must consider the potential impacts on the water supply.

Existing State and Federal regulations for landfills provide protections for water quality, including site location criteria, design and construction standards, and maintenance and monitoring requirements. All solid waste management facilities shall be planned, designed, constructed and operated to protect water quality.

### ***Land Use***

The Harford County Zoning Code includes specific restrictions and requirements for siting new solid waste management facilities. Additionally, new projects are subject to review for site constraints such as traffic and utilities. Permit conditions typically include requirements to prepare and implement an operations and maintenance manual, which includes controls for odors, noise, dust, and/or adverse traffic impacts. The Harford County Zoning Code, Land Use Element Plan, and the County Code include provisions for public notification of potential new solid waste management facility locations will aid the County in reducing the possibility of adjacent incompatible land uses.

### ***Planned Long Term Growth***

The County's Land Use Element Plan calls for higher residential, commercial and industrial growth to be focused within specific areas of the Development Envelope. The County's water and wastewater systems are planned to service the Development Envelope and to provide for the densities associated with this designated growth area.

### ***Defined Critical Areas***

Harford County is affected by the State's Critical Areas Law. –Harford County Code Section 267-63 addresses the Chesapeake Bay Critical Area Overlay District, and includes requirements and prohibitions for facilities located in the Critical Area. New or expanded solid waste collection

and disposal facilities are prohibited in the Critical Area.

**CHAPTER V**  
**SOLID WASTE MANAGENT**  
**SYSTEM PLAN OF ACTION**

## **SOLID WASTE MANAGEMENT SYSTEM PLAN OF ACTION**

The following sections present the approach that Harford County has implemented to assure adequate waste disposal capacity is provided for County residents and businesses during the Plan period of Years 2015 through 2024.

### **1. General Approach and Schedule for MSW Disposal**

Municipal Solid Waste in Harford County is primarily disposed of in two facilities: the Harford Waste-To-Energy Facility (HWTEF), and the lined landfill cells of the Harford Waste Disposal Center (HWDC). This approach will continue until 2016 when the HWTEF ceases operation.

Harford County has entered into an agreement with Baltimore County that will result in an operational change in 2016. Under the terms of the agreement, Harford County Government will direct all licensed waste haulers to deliver all waste collected in Harford County to a new Baltimore County Solid Waste Transfer Station located at the Eastern Sanitary Landfill. Additionally, Harford County plans to deliver waste brought to the homeowners convenience center at HWDC to the Baltimore County facility. This work will be phased in between 2016 and 2019 when an efficient delivery system is fully implemented. Cell N2 of the HWDC landfill will be reserved for occasional loads of MSW and for standby capacity.

The capacity of each of these facilities is discussed in the following paragraphs.

#### **1.1 HWDC Landfill**

The HWDC is Harford County's primary waste management facility. Among the functions

of the HWDC is operation of active landfill cells under Refuse Disposal Permit No. 2012-WMF-0570. The original lined landfill cells of the HWDC were designated Cells A through J, and were placed in operation in 1988. These cells have reached capacity and are being capped in 2014. Additional landfill cells at HWDC have been designed and approved by MDE.

The cells situated in the northern portion of the facility are designated cells N1, N2, and N3. Cell N1 has been constructed and was placed in operation in October 2011. Cell N2 is being constructed in 2014 and is expected to be operational in early 2015. Cell N3 has not been constructed, and will require relocation of the maintenance building and other facilities prior to construction.

The cells situated in the southern portion of the facility are designated S1, S2, S3, and S4. These cells are not yet constructed, and will require relocation of the yard trim facility prior to construction. After MDE approved the design of the cells and issued the relevant permit, changes to the Harford County buffer requirements were enacted. The effect of these changes will be to prevent development of Cell S4 as originally designed.

## **1.2 Harford Waste-To-Energy Facility (HWTE)**

When the HWTEF was constructed in 1988, plans were made and space was provided to add a fifth burner. Beginning in 2005, dialogue began between the Northeast Maryland Waste Disposal Authority (Authority), Harford County, and the Army to consider an expansion/replacement of the existing HWTEF. At that time it was determined that in order to achieve an expanded capacity to meet the needs of both the County and the Army, a replacement facility would be constructed adjacent to the existing HWTEF during the 10-year planning period. Negotiations and development of the project continued through 2009. Under this proposal, the HWTEF was planned to be a state of the art replacement mass burn waste to energy facility with a nameplate capacity of 1500 tons per day. The replacement

facility would have been the primary solid waste acceptance and processing facility for the County. Under the terms of a Memorandum of Understanding between Harford County, Baltimore County and the Authority, the Authority would have developed, constructed and operated the facility adjacent to the current HWTEF located at 1 Magnolia Road, Joppatowne, on additional property leased from the APG. Harford County and Baltimore County would each have had a 50% allocation of the processing capacity of the expanded HWTEF, and each county would have been responsible for management and disposal of its proportional amount of ash residue. An anticipated agreement would have provided for the sale of energy, both electricity and steam, to APG. The expanded HWTEF would have been equipped with air pollution control equipment meeting all state and federal standards and regulations and would have included provisions for recovery of ferrous and non-ferrous metals from the ash residue.

In 2009, negotiations fell apart as APG expressed significant concerns with energy costs, truck traffic and force protection, water sources for steam and site lease arrangements associated with the project. In 2010, on its own initiative, the Army advertised a Request for Proposal for the privatization of an expanded WTE plant to be constructed and operated on behalf of the Army under a contract with a private vendor. Later that year, the selected vendor met with representatives from Harford County, at which time several problems with this initiative were identified. First, the project schedule and timing of the Army's approval of project costs would have resulted in a delay, until 2012, in quantifying the costs for which the County would be responsible. 2012 was beyond the County's decision point for determining a long-term solid waste disposal solution. Secondly, the County would have been required to enter directly into a contract with the selected WTE plant vendor which would have conflicted with the Harford County procurement code. Thirdly, since the Army's project would have required a new solid waste refuse disposal permit holder, it was uncertain if it would be able to satisfy certain State regulations pertaining to new WTE facilities. Concurrently during this timeframe, Harford County explored other potential long-term solid waste disposal solutions. In 2011 Harford County determined the proposed

Army project was no longer a viable option and was not in the County's best interest.

## **2. Exploration of New Solid Waste Transfer Station, and Second Homeowner Drop-off Facility**

As a result of the difficulties encountered with an Army-owned HWTEF as described hereinbefore, Harford County explored alternatives associated with a solid waste transfer station for its long-term solid waste disposal needs to meet the March 2016 deadline. In 2010, Energy Answers of Baltimore, LLC announced its plans to construct and operate a 4,000 ton per day waste to energy facility in the Fairfield section of Baltimore City. The 140 megawatt power plant would have utilized processed materials derived from the municipal solid waste stream as its primary fuel source. The Processed Refuse Fuel (PRF) would have been produced at permitted solid waste management sites in and around Maryland but remote from the power plant site. As part of this effort, Energy Answers teamed with Maryland Environmental Services (MES) as a fuel supplier to its power plant. MES began to solicit interest from Maryland municipalities and counties in 2010.

During this time Harford County also recognized the need to build a new recycling transfer station as well as a second homeowner's drop-off facility and to combine them into the same location as a solid waste transfer station which would provide economies of scale with the combined operations. The existing recycling transfer station, located at the HWDC was built in the 1992 as a temporary facility with the advent of the County recycling program. The existing facility has two truck bays, but has little space on the tipping floor and little cueing space for the truck traffic. This is an open-air facility which does not meet the current standard in the industry which requires enclosed buildings. As a result, it has been labor-intensive to constantly patrol blown litter within and around the litter fencing which surrounds the site. The current facility is inadequate to handle the current and future truck traffic from local trash collectors transporting single stream recyclables collected within the County.

Additionally, except for subscribing to a private trash collection service, the only other method for residents to individually dispose of their trash and recyclables is to bring them to the HWDC. Due to its location in Street, this facility is not convenient to County citizens who reside in the southern portion of the County. To make matters worse, the HWDC homeowner's drop-off facility was built in the 1980's and cannot handle the volume of traffic received on Saturdays and before or after certain holidays. Traffic often backs-up onto Scarboro Road. Providing a second homeowner's drop-off facility should alleviate some of the above traffic congestion and public inconvenience. It was envisioned the new solid waste transfer station would also function as a recycling transfer station by dedicating a portion of the building for this purpose.

Criteria utilized for the site selection consisted of (1) proximity to I-95 to reduce hauling costs since all solid waste would be transported utilizing I-95; (2) access to State roads to minimize truck traffic on County residential roadways; (3) location within the Harford County development envelope, preferably in the southern portion of the County to allow the second homeowner drop off facility to be convenient to residents in the more populated and southern areas of the County; (4) usable acreage to support the proposed facilities; (5) acceptable zoning; and (6) property available for sale.

In 2011 Harford County evaluated sites for the proposed facilities. A site which encompassed 23.1 acres, located at 815 Philadelphia Road, Joppa, Maryland and met all of the above criteria was acquired in July 2011 for the purpose of building and operating the solid waste transfer station, recycling transfer station, and homeowner drop-off facility.

In 2011, Harford County entered into negotiations with MES to design, construct, and operate a solid waste transfer station which would also serve as a fuel processing facility for the Energy Answers power plant. However, due to economic conditions, lack of commitment from other governmental agencies, and the magnitude of the power plant

project, it became difficult for Energy Answers to acquire the necessary financing in a timely manner. As a result of the uncertainty of the Energy Answers project and the costs associated with the MES proposal, it was determined in 2012 that it was no longer in the County's best interest to further pursue the above partnership.

### **3. Exploration of Other Solid Waste Disposal Solutions**

In 2012, Harford County performed an in-depth evaluation of several other long-term solid waste disposal solutions. These alternatives included:

1. Design, construct and operate a solid waste transfer station at HWDC
2. Design, construct and operate a solid waste transfer station at the Joppa Site
3. Extend the operation of the HWTEF
4. Partner with Baltimore County to develop a regional approach to solid waste disposal and deliver all Solid Waste and Single Stream Recyclables to the Baltimore County Transfer Station in White Marsh, MD

Upon review of the evaluation, it was determined that it was in the best interest of the County to partner with Baltimore County to conserve resources and to deliver all Harford County solid waste and single stream recyclables to the transfer station owned and operated by Baltimore County at the Eastern Landfill complex in White Marsh, MD. In comparison to delivering solid waste to the HWTEF, local trash collectors would travel an extra 2.5 miles to the Baltimore County transfer station. Solid waste and single stream recyclables delivered to the HWDC homeowner's drop-off facility will be transferred to the Baltimore County transfer station. An Intergovernmental Agreement was developed between Harford County and Baltimore County to define the terms and conditions of the arrangement. The term of the Agreement is 20 years with two additional 10 year extensions if both parties wish to extend. After approval by the Harford County Council during a public hearing in June 2013, the Agreement was fully executed in August 2013 and will go into effect on or

about March 17, 2016. As part of this work, Baltimore County will be designing, constructing and operating a new solid waste transfer station at the Eastern Landfill complex, with sufficient capacity for both Harford County and Baltimore County during the term of the Agreement.

The County continues to review alternatives to the plan which would require razing the HWTEF and removal of steam lines before March 2019, in accordance with the Site Lease Agreement between the Army and the Northeast Maryland Waste Disposal Authority.

#### **4. Homeowner Drop-off Center**

As discussed hereinbefore, the only homeowner drop-off center available to County residents is the HWDC. As confirmed in the opinion survey, the HWDC is not convenient to many County residents due to its remote location. Additionally, the facility cannot handle existing and future customer traffic on-site. There is little space available for traffic queuing. Traffic congestion on weekends is significant. Additionally, the layout requires heavy equipment and truck traffic to inter-mingle with passenger vehicles, causing safety concerns. The scalehouse only has one cashier's window which also leads to congestion. On some days the facility receives over 500 residential customers off of a residential road within a residential neighborhood causing an inconvenience to neighboring property owners. Unfortunately, the HWDC drop-off center does not have adequate room to be re-configured to address the above concerns.

In 2010 Harford County purchased property off of MD 440 with the intent of establishing a new entrance to the HWDC off of a State road within an area designated for General Industrial land use. Sufficient land is also available to construct and operate a new homeowner drop-off center which eliminates all of the concerns associated with the existing facility. Therefore the construction and operation of a new HWDC homeowner drop-off facility should be considered during the planning period.

## **5. Mulch and Compost Facilities**

Harford County currently has sufficient space and capacity to process existing quantities of leaves, grass, and woody vegetation into mulch and compost at the Harford Waste Disposal Center. As discussed in Chapter 3, Harford County will not consider constructing and operating a food waste composting facility due to siting concerns and a high potential for process upsets creating nuisance odors. There may be future opportunities with other counties in the Baltimore metropolitan area whereby they may have interest in constructing a regional food waste composting facility and would solicit feed stock from Harford County in the form of food waste, leaves and grass. In return, the County may have the opportunity to receive back quantities of finished compost for sale to County residents. Such future opportunities shall be explored during the planning period as zero-waste initiatives become promulgated by the State Legislature. In the above situation, by diverting leaves and grass, the County would have sufficient space and capacity to process woody vegetation into mulch for the duration of the planning period at the HWDC. However, without the diversion of leaves and grass, it is likely the HWDC mulch and compost facility will exceed its annual capacity within the planning period and another location will be required. As discussed in Chapter 3, County residents have expressed an interest in a more convenient facility that is closer to the general population. Therefore, the construction and operation of a second mulch and compost facility, coupled with a homeowner drop-off facility should be evaluated during the planning period provided the revenues can support the projected expenditures for that facility. If a second mulch and compost facility is not to be considered, then the planning and implementation for a relocation of the existing HWDC facility to a location with sufficient capacity long-term should be considered during the next planning period.

The Tollgate yard trim drop-off facility is currently inadequate to serve customers in terms of space, traffic queuing, and traffic flow. However, it is convenient to many as it is within close proximity to the greater population. The facility can be expanded slightly, but

constraints from the existing Tollgate landfill prevent the on-site processing of mulch and compost. If a second mulch and compost facility is constructed and operated in an area closer to the greater population, the closing of the Tollgate yard trim drop-off facility should be considered for efficiencies and program costs.

## **6. Debris Management**

In 2010, the Harford County Department of Public Works, Division of Environmental Services, in cooperation with the Harford County Executive, the other Public Works Divisions, the Department of Emergency Services, the Department of Parks and Recreation, the Department of Planning and Zoning, the Department of Procurement, the Department of Administration, the County Building Official, the Harford County Health Department, the Town of Bel Air, the City of Havre De Grace, and the City of Aberdeen, developed the Harford County Debris Management Plan.

The purpose of the Debris Management Plan is to provide the framework for Harford County and the incorporated municipalities to clear, remove, manage, and dispose of debris that has been generated from a declared public emergency such as a natural or a manmade disaster.

The draft plan was submitted for review and comment to the Maryland Department of Environment. The final plan was submitted to the Federal Emergency Management Agency (FEMA) for review and approval. FEMA approval was issued in January 2011. This plan was subsequently updated in 2013 and subsequent FEMA approval was issued in January, 2014.

The Debris Management Plan is developed, promulgated, and maintained in accordance with the following Federal and State regulations and guidelines:

- Annotated Code of Maryland
- Code of Maryland Regulations
- Governor’s Executive Order
- Public Law 93-288 as amended by Public Law 100-107, the Stafford Disaster Relief and Emergency Assistance Act
- Public Law 81-920, Federal Civil Defense Act of 1950, as amended
- CFR, Title 44, Part 200
- Maryland Emergency Management Agency Emergency Operations Plan
- Harford County Emergency Operations Plan
- Public Assistance Debris Management Guide, FEMA P-325

Due to the voluminous nature of this document it is not included as an Appendix but is incorporated herein by reference in this Solid Waste Management Plan.

## **7. Future Recycling Requirements and Opportunities**

### ***7.1 Event Recycling***

The Annotated Code of Maryland, Environment Article 9-1703 (b) (g) requires that organizers of special events (“Organizer” or “Organizers”) that include temporary or periodic use of a public street, publicly owned site or facility, or public park, serve food or drink, and are expected to have 200 or more persons in attendance provide recycling services beginning on October 2015.

#### **A. Program Development**

Each special event organizer must meet the following minimum requirements:

- i. At a minimum, acceptable plastic, metal, and glass containers and acceptable paper products shall be collected.
- ii. Recycling containers must be immediately adjacent to each trash receptacle.

- iii. Recycling containers must be clearly distinguished from trash containers by color and/or signage.
- iv. Special event organizers must ensure that all recyclable materials deposited into recycling containers at the special event are collected for recycling.
- v. Event organizers must provide food scrap recycling if feasible.
- vi. Upon request by the Harford County Office on Recycling, either before or after the event, each event organizer shall submit a review of their recycling plan.

#### **B. Program Communication**

Special events are organized by various groups, in many locations around the County, and at all times of the year. Some events are annual while others may occur only once. It can be a challenge to communicate new requirements to the event organizers given the characteristics of special events. In order to reach the responsible parties, the Harford County Department of Public Works, Division of Environmental Services, will:

- i. Maintain a webpage detailing the special event recycling requirements.
- ii. Include information regarding special event recycling on the following special event permit applications and/or webpages:
  - a. Harford County Health Department's Temporary Food Facility License Application
  - b. Harford County Liquor Board's Special One Day Alcohol Beverage License Application
  - c. Harford County Department of Inspections, Licenses, and Permits' Planning Concert Permit Application

#### **C. Feasibility of Food Scrap Recycling**

Food scrap recycling, or composting, is an area of growing interest. Event organizers are expected to consider the feasibility of including food scrap recycling at their event. However, at this time the

availability of food scrap recycling is limited. In 2014, there is only one commercial food scrap recycler operating in Harford County. In order to facilitate the consideration of food scrap recycling by the event organizers, a list of active food scrap recyclers and resources will be maintained at [www.harfordrecycles.org](http://www.harfordrecycles.org).

#### **D. Program Monitoring**

The Harford County Department of Public Works, Division of Environmental Services will have the right to inspect, for compliance, any special event subject to this Plan including inspecting containers and reviewing records regarding the recycling provisions.

#### **E. Program Enforcement**

- i. Any event organizer who violates section 109-7.3 of the County Code may be subject to the issuances of a citation by the County and a civil penalty not to exceed \$50 per day for each day that the violation continues.
- ii. A person who receives a citation shall, within 30 calendar days after receiving the citation, either pay the fine to the County or appeal the citation in accordance with subsection 109-7.3.D(3)6 of the County Code.
- iii. If the citation is not timely paid or appealed, the county may enforce the fine by action at law.

#### **7.2 Other Recycling Opportunities**

Other opportunities may exist during the planning period to increase recycling quantities provided they are feasible and cost effective to implement. Such opportunities include (1) the collection and recycling of plastic wrap used in covering hay bales (agricultural wrap) and vessels at marinas as well as used plastic livestock feed bags; (2) the collection and recycling of used vinyl siding; (3) the collection and recycling of Styrofoam; and (4) the collection and recycling of construction and

demolition material from County residents.

## **8. Funding**

Currently, the County receives revenue to support the Division of Environmental Services' operating and capital budgets from the following sources:

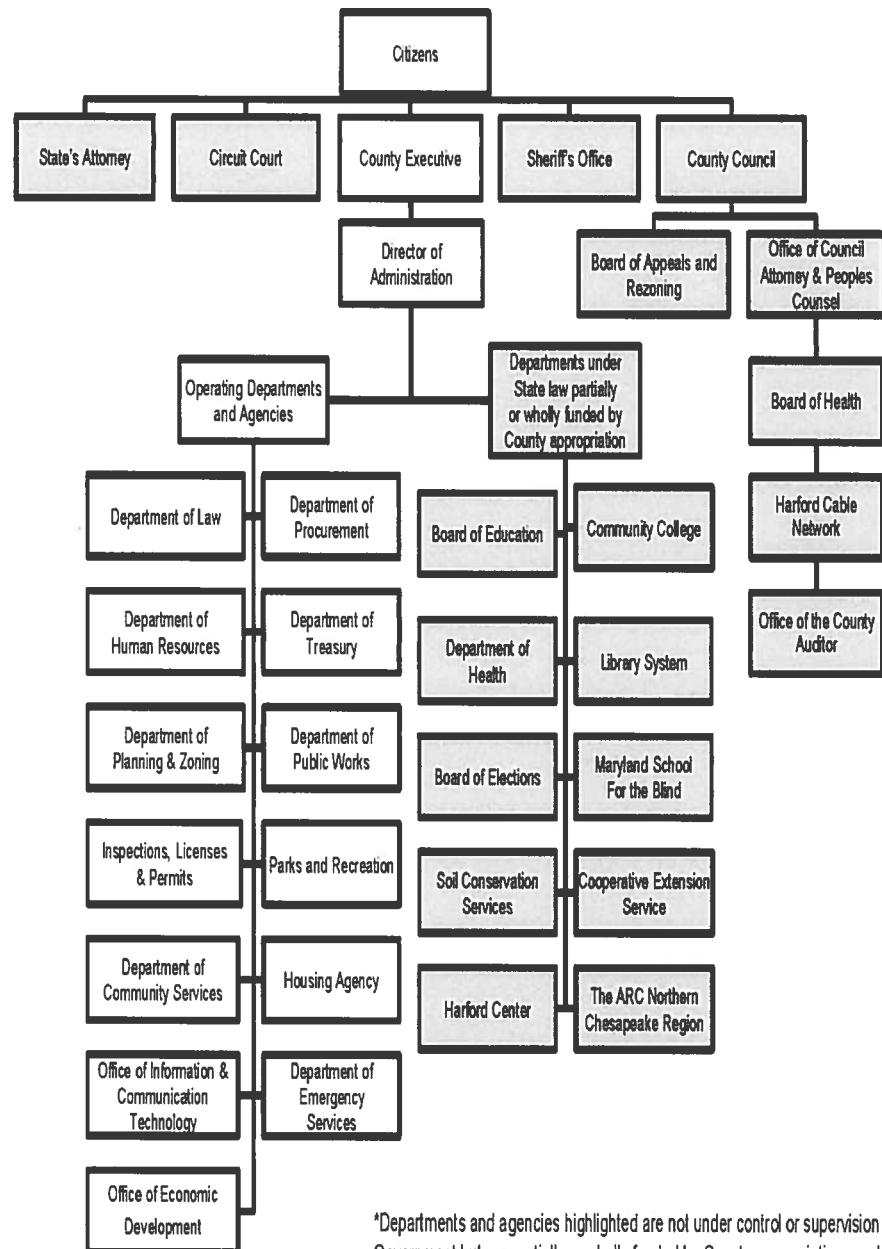
- Tipping Fees
- WTE Steam Sales
- Fixed Fees – Residential Customers
- WTE Permitted Material Disposal Fees
- WTE Tire Disposal Fees
- Scrap Metal Sales
- Mulch and Compost Sales
- General Fund Support

In light of the changes in the solid waste disposal program that will occur in 2016, the County is currently undergoing a full-cost accounting study to evaluate the feasibility of developing a special revenue fund or enterprise fund for the Division of Environmental Services so that the Division achieves financial sustainability without reliance on the General Fund. This study will also propose a new solid waste fee structure to support this endeavor during the planning period. Depending upon the results of this study, the County should consider the above goal of providing a solid waste and recycling program that is financially sustainable and eliminates the need for General Fund support within the planning period.



# APPENDIX 1

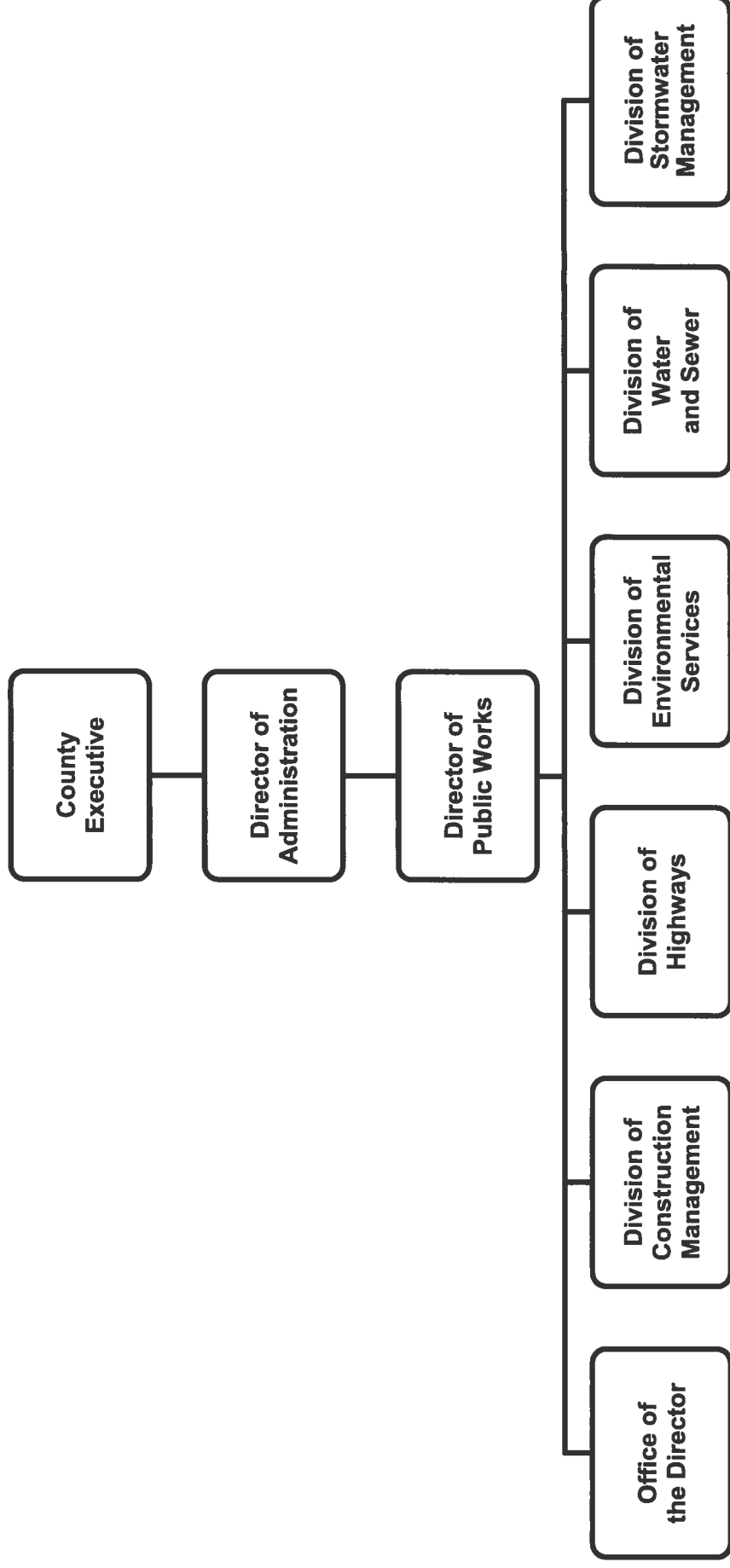
# HARFORD COUNTY GOVERNMENT ORGANIZATION CHART



\*Departments and agencies highlighted are not under control or supervision of Harford County Government but are partially or wholly funded by County appropriations under State law.

# APPENDIX 2

# DEPARTMENT OF PUBLIC WORKS



# APPENDIX 3

# PENNSYLVANIA












# APPENDIX 4

PENNSYLVANIA

CECIL COUNTY

BALTIMORE COUNTY

# LAND USE MAP 2012 LAND USE ELEMENT PLAN

- |   |   |   |  |
|---|---|---|--|
|  | AGRICULTURAL                                      | N   | NEIGHBORHOOD CENTER                    |
|  | LOW INTENSITY                                     | C   | COMMUNITY CENTER                       |
|  | MEDIUM INTENSITY                                  | V   | RURAL VILLAGE                          |
|  | HIGH INTENSITY                                    | T   | TOWN CENTER                            |
|  | INDUSTRIAL / EMPLOYMENT                           | CHESAPEAKE BAY  | CRITICAL AREA                          |
|  | STATE AND COUNTY PARKS<br>(GREATER THAN 10 ACRES) |  | AIRPORT                                |
|  | MUNICIPAL   | HCC   | HARFORD COMMUNITY COLLEGE              |
|  | ABERDEEN PROVING GROUND                           | HEAT  | HIGHER EDUCATION<br>APPLIED TECHNOLOGY |
|   |   | MO  | MAJOR OFFICE                           |

SCALE 1 INCH = 1 MILE

1 0 1 2 Miles



THIS IS A REPRESENTATION OF THE 2012 LAND USE MAP, PURSUANT TO THE PROVISIONS OF CHAPTER 186 SUBSECTION C OF THE HARFORD COUNTY CHARTER ADOPTED BY COUNTY COUNCIL, BILL 12-01 AS AMENDED THE SIXTH DAY OF MARCH, 2012.

THE LAND USE ELEMENT PLAN INCLUDES BOTH MAP AND TEXT. BOTH COMPONENTS SHOULD BE CONSULTED FOR COMPLETE INFORMATION. ADDITIONAL INFORMATION MAY BE OBTAINED FROM:

HARFORD COUNTY DEPARTMENT OF PLANNING AND ZONING  
220 SOUTH MAIN STREET  
BEL AIR, MARYLAND 21014  
(410) 830-3163

## LAND USE MAP HARFORD COUNTY, MARYLAND

CHESAPEAKE BAY

KENT COUNTY

# APPENDIX 5

## POPULATION PROJECTIONS

Year	Population
2010	244,826
2011	247,013
2012	249,200
2013	251,387
2014	253,574
2015	255,760
2016	257,582
2017	259,404
2018	261,226
2019	263,048
2020	264,870
2021	266,626
2022	268,382
2023	270,138
2024	271,894

Notes:

1. Source: Harford County Planning and Zoning for years 2010, 2015, 2020, 2025, and 2030.
2. Year 2010 data from U.S. Census
3. Years 2015 and 2020 were projected based upon expected residential growth.
4. Population estimates between 5-year intervals estimated as linear growth.

# APPENDIX 6

# TOTAL FULL AND PART-TIME JOBS (by Place of Work) BY INDUSTRY, 2001 - 2040 1/

## HARFORD COUNTY

NAICS Major Industry	Historic Data										Projected Data					
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2015	2020	2025	2030	2035	2040
Total Employment	95,660	98,585	102,217	106,932	111,603	115,051	118,389	117,954	115,489	115,639	138,400	150,300	155,400	159,300	162,800	166,300
Farm employment	1,045	1,037	939	895	866	841	843	817	804	830	900	900	800	800	800	700
Forestry, fishing, related activities, and other 2/	163	249	135	181	192	214	237	233	222	212	200	200	200	200	200	200
Mining	123	82	60	34	33	35	61	61	158	172	200	200	200	200	200	200
Utilities	62	78	77	100	86	93	90	83	67	49	100	100	100	100	100	100
Construction	7,400	7,504	8,236	9,252	9,991	10,214	9,926	9,123	7,992	7,918	10,000	11,100	11,800	12,500	13,000	13,500
Manufacturing	5,169	4,964	5,094	5,311	5,137	5,047	5,084	5,613	5,106	4,795	5,100	5,200	5,000	4,900	4,700	4,500
Wholesale trade	3,048	2,981	3,057	3,332	3,432	3,511	3,495	2,874	2,814	2,914	3,400	3,600	3,700	3,700	3,700	3,800
Retail trade	14,861	13,248	13,592	14,107	14,557	14,849	15,172	15,463	15,238	14,987	16,700	18,200	18,600	18,800	18,900	19,000
Transportation and warehousing	2,872	4,150	4,308	4,294	4,574	4,593	4,577	4,488	4,142	4,147	5,000	5,500	5,600	5,800	5,900	6,000
Information	1,062	1,041	967	949	1,056	1,018	937	995	1,020	1,002	1,200	1,300	1,400	1,400	1,500	1,600
Finance and insurance	3,004	3,534	3,890	4,179	4,147	4,263	4,583	4,846	5,098	5,246	6,300	6,900	7,100	7,200	7,300	7,400
Real estate and rental and leasing	3,391	3,527	3,864	4,411	4,948	5,487	6,296	6,030	6,064	5,987	6,800	7,100	7,200	7,300	7,400	7,500
Professional and technical services	6,625	7,890	8,561	9,348	9,871	9,281	10,257	10,184	9,725	9,313	11,600	12,800	13,600	14,100	14,600	15,100
Management of companies and enterprises	345	190	156	159	172	181	233	312	260	261	300	400	400	400	400	500
Administrative and waste services	4,952	4,995	4,855	5,426	5,979	6,195	5,997	5,774	5,500	5,655	7,100	8,000	8,600	9,000	9,500	9,900
Educational services	1,066	1,200	1,256	1,286	1,415	1,607	1,667	1,608	1,606	1,652	2,100	2,500	2,700	2,900	3,200	3,400
Health care and social assistance	8,270	8,694	9,039	9,372	9,655	9,889	10,850	11,301	11,137	11,233	13,900	15,600	16,700	17,700	18,600	19,500
Arts, entertainment, and recreation	1,893	1,973	2,027	2,239	2,490	2,559	2,739	2,760	2,612	2,644	3,300	3,800	4,000	4,200	4,400	4,700
Accommodation and food services	5,467	5,896	6,286	6,371	7,044	7,417	8,067	8,019	7,845	7,734	9,400	10,300	10,900	11,200	11,600	12,000
Other services, except public administration	5,419	5,869	6,063	6,082	6,278	6,486	6,526	6,487	6,363	6,296	7,700	8,500	8,900	9,300	9,600	10,000
Government and government enterprises 3/	19,423	19,483	19,755	19,604	19,680	21,271	20,752	20,883	21,716	22,592	27,100	28,100	27,900	27,600	27,200	26,700
Federal, civilian	7,445	7,028	7,424	7,431	7,539	7,611	7,514	7,760	8,659	10,110	14,100	14,500	14,300	14,200	14,000	13,700
Military	3,349	3,502	3,686	3,533	3,344	4,517	3,870	3,562	3,495	2,903	3,100	3,000	2,800	2,500	2,300	2,100
State and local	8,629	8,953	8,645	8,640	8,797	9,143	9,368	9,561	9,562	9,579	9,900	10,600	10,800	10,900	10,900	10,900
State	488	508	509	495	480	475	466	467	458	485	500	600	600	600	600	600
Local	8,141	8,445	8,136	8,145	8,317	8,668	8,902	9,094	9,104	9,094	9,400	10,000	10,200	10,300	10,300	10,300

1/ The estimates of employment for 2001-2006 are based on the 2002 North American Industry Classification System (NAICS). The estimates for 2007 forward are based on the 2007 NAICS.

2/ "Other" consist of the number of jobs held by U.S. residents employed by international organizations and foreign embassies and consulates in the U.S.

3/ Employment in Industry Code 2000 (Government) is the total of all employment in Industry Codes 2001 to 2012 (Federal, Military, State and Local Government)

"(L)" Less than 50 jobs

Note: Values in boxes represent estimated data. Some employment data is suppressed by the Bureau of Economic Analysis to protect confidentiality

Projections from 2015 to 2040 prepared by the Maryland Department of Planning using historic data from U.S. BEA Table CA-25N, June 2012

# APPENDIX 7



## Chapter 267. ZONING

### Part 1. Standards

#### Article X. Landfills

##### § 267-89. Sanitary landfills.

This use is permitted in the AG, RR, R1, R2, R3, R4, RO, VR, VB, B1, B2, B3, CI, LI and GI Districts, provided that:

- A. The site must be included in the most recently adopted Harford County solid waste management plan.
- B. The site must be a minimum of 100 acres in size.
- C. A site plan shall be developed to consider and address topography of the area, ability to effectively buffer the landfill area and such other factors as the Departments of Planning and Zoning and Public Works and the County Council deem relative in conformity with § **267-91** (Board of Appeals, Limitations, guides and standards).
- D. A buffer area, designed to adequately buffer the landfill activities from view of adjoining properties, shall be maintained between the fill area and adjoining property lines. If the existing vegetation within the buffer area does not adequately screen the landfill activities, a landscaped earth berm shall be constructed within the buffer area to provide adequate screening. The distance shall be determined by the County Council after the site plan is developed. For any landfill, or landfill expansion, receiving a permit from the Maryland Department of the Environment after the effective date of this act, a minimum buffer area of 1,000 feet shall be maintained between the fill area and any adjoining residential property line, not including properties owned by the entity operating the landfill. A Type "E" buffer, pursuant to § **267-30** (Buffer yards), shall be provided next to any adjacent residential lot and along any public road. Prior to commencement of landfilling activities, a minimum 20-foot recreational buffer shall be established within the required buffer yard.
- E. An undisturbed buffer area of 1,000 feet shall be maintained between the fill area and the banks of the Deer Creek.
- F. The Department of Public Works shall cause, prior to submission of the site plan to the County Council, a notice to be published once a week for 2 consecutive weeks in 2 newspapers of general circulation in the County. The notice shall identify the location of the site, the acreage and physical description of the site.

##### § 267-90. Rubble landfills.

This use is permitted in the AG, RR, R1, R2, R3, R4, RO, VR, VB, B1, B2, B3, CI, LI and GI Districts, provided that:

- A. The site is at least 100 acres in size and must be included in the most recently adopted Harford County solid waste management plan.

- B. The Department of Public Works shall cause, prior to submission of the site plan to the County Council, a notice to be published once a week for 2 consecutive weeks in 2 newspapers of general circulation in the County. The notice shall identify the location of the site, the acreage and physical description of the site.
- C. An undisturbed buffer area, designed to adequately buffer the landfill activities from view of adjoining properties, shall be maintained between the fill area and adjoining property lines. The distance shall be determined by the County Council after the site plan is developed and shall be a minimum of 1,000 feet from adjoining property lines. A Type "E" buffer, pursuant to § 267-30 (Buffer yards), shall be provided next to any adjacent residential lot and along any public road. Prior to commencement of landfilling activities, a minimum 20-foot recreational buffer shall be established within the required buffer yard.
- D. All areas in which solid waste is deposited are at least 500 feet from the Floodplain District established by Chapter 131 of the Harford County Code, as amended.
- E. All areas in which solid waste is deposited are at least 1,000 feet from any lawfully permitted off-site residential or institutional building.
- F. The rubble landfill is contoured to substantially conform to the original grade of the site and, in any case, the height of the landfill does not exceed the height of the tallest structure, excluding towers, or natural feature within 2,500 feet of the parcel.

§ 267-91. Solid waste transfer stations.

**[Amended by Bill No. 11-62]**

This use may be granted in the AG, B3, CI and GI Districts, provided that:

- A. The site must be included in the most recently adopted Harford County solid waste management plan. The site must be at least 3 acres in the AG District and at least 1 acre in the B3, CI or GI district.
- B. A 150 foot buffer shall be provided next to any adjacent residential lot and along any public road. Ancillary uses may be allowed within the buffer including access roads; stormwater management; utilities; wetland mitigation and reforestation; site security measures; and landscaping.
- C. Lighting shall be designed and controlled so that any light shall be shaded, shielded or directed so that the light intensity or brightness does not adversely affect the operation of vehicles or reflect into residential lots or buildings.
- D. Outside storage of materials or equipment shall be completely buffered from view of adjoining residential properties and public roads.
- E. To the extent possible, all buildings on the site shall be located and configured in a manner to maximize the distance between the buildings and adjacent residential lots.
- F. Fencing shall be erected and maintained around the facility.

§ 267-92. Other County solid waste processing facilities.

**[Amended by Bill No. 11-62]**

These uses only include County operations associated with the collection of yard waste and recyclable materials. These uses may be granted in the AG, RR, R1, R2, R3, R4, RO, VR, VB, B1, B2, B3, CI, LI and GI Districts, provided that:

- A. The facility must be located on County-owned property and operated by the Harford County Department of Public Works.
- B. The facility is for the sole purpose of collecting yard waste, as defined by the solid waste management plan, and other recyclable materials.
- C. A 150 foot buffer shall be provided next to any adjacent residential lot and along any public road. Ancillary uses may be allowed within the buffer including access roads; stormwater management; utilities; wetland mitigation and reforestation; site security measures; and landscaping.
- D. Lighting shall be designed and controlled so that any light shall be shaded, shielded or directed so that the light intensity or brightness does not adversely affect the operation of vehicles or reflect into residential lots or buildings.
- E. Outside storage of materials or equipment shall be completely buffered from view of adjoining residential properties and public roads.

## Chapter 109. ENVIRONMENTAL CONTROL

### Article I. General Provisions

§ 109-8.5. Landfill, solid waste transfer station or other solid waste processing facility.

**[Added by Bill No. 11-62]**

- A. Prior to submission for inclusion of a landfill, solid waste transfer station or other solid waste processing facility into the Solid Waste Management Plan, a community meeting shall be held.
- B. The community meeting shall be held near the site of the proposed facility, preferably in a public or institutional building with adequate parking. The meeting shall be scheduled to start between 6:00 p.m. and 8:00 p.m. on a weekday evening, or scheduled between 9:00 a.m. and 5:00 p.m. on a Saturday, excluding all state and County holidays.
- C. At least two weeks prior to the community meeting, the owner/operator of the proposed facility shall ensure that notice of the date, time and location of the community meeting, as well as information required under Subsection J of this section has been provided to the following:
  - (1) All property owners within one-quarter mile of the proposed facility as identified in the records of the State Department of Assessment and Taxation, by first class mail;
  - (2) The Department of Public Works, which will post the meeting notice on the County website; and
  - (3) The County Council.
- D. At least two weeks prior to the community meeting, the owner/operator shall ensure that the property that is the subject of the proposed facility is posted with a notice, obtained from the Department of Public Works, stating the date, time and location of the community meeting. The notice shall briefly describe the proposed facility and include the County website address. The notice shall be on a sign measuring at least 22 inches by 28 inches. The notice shall be conspicuously placed on the property, near the right-

of-way line of each public road that the property has frontage on, at such location that the notice shall be visible, if possible, from each public road on which the property fronts. Following the posting, the owner/operator shall use reasonable efforts to maintain the notice in a condition visible to the public until the date of the community meeting.

- E. At least two weeks prior to the community meeting, the owner/operator shall ensure that notice of the community meeting is published once a week for two consecutive weeks, in at least two newspapers generally circulated in Harford County.
- F. The purpose of the community meeting is for the owner/operator to provide information to the community regarding the proposed facility and to allow citizens to ask questions and to make comments and suggestions.
- G. At the community meeting, the owner/operator shall present draft plans for the site layout which includes the information required under Subsection J of this section.
- H. The owner/operator shall ensure that a certification of mailed meeting notices and a certification of the newspaper advertisements are included with the submission of the application for inclusion in the Solid Waste Management Plan.
- I. Within 45 calendar days of the community meeting, the owner/operator shall submit a summary of the comments made by citizens at the community meeting to the Department.
- J. At the community meeting the owner/operator shall provide the following information about the proposed facility:
  - (1) Information showing that there is a demonstrated need for the facility in the County;
  - (2) The name, address, and telephone number of the owner/operator;
  - (3) A map showing the current zoning classification of all land within one mile of the parcel;
  - (4) Color-coded maps showing:
    - (a) All residential, institutional, industrial, and agricultural buildings and improvements within one mile of the parcel; and
    - (b) The approximate location of all proposed residential, institutional, and industrial buildings and improvements that are:
      - [1] Part of a concept plan, preliminary plan, or site plan currently approved by the Director of Planning and Zoning and located within one mile of the parcel.
  - (5) A contour map on a scale specified by the Department which shows:
    - (a) The elevation of all land within one mile of the parcel; and
    - (b) In a different color, the proposed final elevations of the facility;
  - (6) Reproductions of the appropriate maps that:
    - (a) Show all parcels and lots within one mile of the parcel;
    - (b) Indicate by means of color-coding:
      - [1] All public water lines;
      - [2] All parcels that receive public water;
      - [3] All improved parcels that do not receive public water; and
      - [4] All unimproved parcels;
  - (7) A description of any natural screening and buffer on the site and the owner's/operator's proposed screening and buffer plan;
  - (8) Any information on roads and traffic in the area of the site, including but not limited to functional classification of surrounding roadways and existing average daily traffic (ADT) on roads surrounding the proposed site;

- (9) A description of the proposed plan to be used for preventing the escape of dust and solid waste from the site;
- (10) A description of the proposed procedures to be used to prevent dirt, soil and solid waste from the site from accumulating on the roads used for ingress to and egress from the site;
- (11) A list of the proposed hours of operation and a description of the proposed site design and operating procedures to be used to ensure that traffic to the site does not accumulate off-premises before, during, and after the hours of operation;
- (12) A description of the proposed security measures to be used to prevent unauthorized entry into the site after normal operating hours;
- (13) A description of the proposed checking and operating procedures to be used to ensure that prohibited material is not deposited at the site;
- (14) A list of each state and local permit the owner/operator must obtain before commencing operation of the solid waste facility;
- (15) A description of the proposed plan for controlling odors and noise;
- (16) An estimate of the daily tons of solid waste to be received and an estimate of the number of trucks to the site on a daily basis; and
- (17) A detailed plan showing the dimensions of the facility and any uses to be conducted

# APPENDIX 8

Tons of Material Processed at the Harford Waste Disposal Center

Material Type	Household	Commercial	Industrial	Mixed	Ash Residue	Latex Paint Residue	Dirt	Bulky Waste	Homeowner Bin	Rejected Yard Waste
2003	13,055	9,400	2,768	855	27,397	41	11,704	1,810	10,620	289
2004	12,478	9,750	3,281	662	8,511	96	4,790	2,617	13,907	9
2005	13,042	12,204	3,130	604	6,908	135	3,332	2,792	14,241	71
2006	12,920	13,476	3,224	1,220	17,226	155	10,077	2,724	13,182	236
2007	4,083	6,017	3,922	1,214	16,825	142	69,361	1,782	11,412	206
2008	3,117	3,321	3,692	639	8,437	164	35,164	1,549	8,458	685
2009	722	1,885	1,052	357	11,384	151	20,236	1,357	2,356	238
2010	926	423	141	523	8,498	145	14,553	935	1,536	141
2011	11,247	789	21	518	5,765	121	2,982	618	2,261	23
2012	35,564	5,431	146	530	23,565	131	15,192	1,001	8,836	72
2013	44,969	6,946	219	717	33,893	130	143	891	8,698	10

Material Type	Mattresses	Rejected Materials	Recycled Metal	Recycled Gas Cylinders	Recycled Scrap Metal	Grit Screenings	Asbestos	Recycled Electronics	Textiles	Yard Waste
2003	14	11,253	3,077	19	1,104	339	29	0	19	55,372
2004	4	3,147	2,773	18	828	232	24	0	9	65,547
2005	0	951	2,657	28	963	390	25	83	7	67,705
2006	0	1,275	2,290	11	556	385	31	132	6	44,499
2007	0	411	1,996	11	295	295	21	167	12	43,388
2008	2	89	1,765	10	196	320	21	187	6	70,711
2009	18	12	1,719	7	193	382	8	215	0	56,968
2010	12	24	1,337	7	106	323	17	288	7	37,310
2011	26	20	1,122	4	107	336	9	182	13	50,926
2012	59	82	821	4	31	362	8	157	1	57,398
2013	29	175	757	9	18	395	7	141	20	44,333

Tons of Material Processed at the Harford Waste To Energy Facility

Material Type	Household	Commercial	Industrial	Mixed	Ash Residue	Bulky Waste	Homeowner Bin	Rejected Yard Waste	Rejected Materials	Recycled Metal	Recycled Gas Cylinder	Recycled Scrap Metal	HWDC Tires
2003	54,662	50,970	0	779	0	0	90	0	3	9	4	0	205
2004	55,985	48,917	0	154	48	0	0	0	0	0	1	20	241
2005	56,406	48,433	0	24	0	0	0	0	6	0	0	0	288
2006	60,939	48,062	0	3	0	0	0	0	86	0	0	0	287
2007	70,491	50,160	0	0	0	0	767	0	60	0	0	0	166
2008	46,119	53,507	0	184	22	0	205	0	80	0	0	0	240
2009	48,216	55,955	0	7	0	0	0	0	28	0	0	0	202
2010	53,570	50,134	0	2	0	0	176	0	41	0	0	0	225
2011	47,521	46,218	0	4	0	0	297	0	76	0	0	0	147
2012	26,312	51,189	0	0	0	5	115	0	55	0	0	0	167
2013	14,910	44,423	190	13	0	0	0	7	32	0	0	0	214

# APPENDIX 9

**Annual Waste Generation in Harford County as Reported by all Maryland Permitted Facilities**  
**Per COMAR Section 26.03.03**  
**2015-2024**

	Annual Generation (Tons)			
<b>COMAR 26.03.03 Waste Category (Combined State-wide Facilities)</b>	<b>2012 Actual</b>	<b>2016 Estimates</b>	<b>2020 Estimates</b>	<b>2024 Estimates</b>
Residential Solid Waste	61,471	61,471	62,757	64,251
Commercial Solid Waste	77,128	77,128	88,929	91,098
Mixed Solid Waste	615	615	709	726
Industrial Solid Waste	0	0	0	0
Institutional Solid Waste	0	0	0	0
Demolition Debris (rubble)	31,589	31,589	36,422	37,311
Land Clearing Debris	0	0	0	0
Controlled Hazardous Substance (CHS)	0	0	0	0
Dead Animals	0	0	0	0
Bulky or Special Waste	0	0	0	0
Vehicle Tires	1,741	1,741	2,007	2,056
Wastewater Treatment Plant Sludges	0	0	0	0
Septage	0	0	0	0
Asbestos	129	129	149	152
Woodwaste/Wood	8	8	9	9
Concrete	1,660	1,660	1,914	1,961
Special Medical Waste	344	344	397	406
Witness Burns	332	0	0	0
Scrap Metal	26	26	27	
Household Hazardous Waste	0	0	0	0
Compost	1,283	1,283	1,632	1,665
Soil	89	89	113	116
<b>Total MRA &amp; NON MRA Waste Disposed</b>	<b>176,415</b>	<b>176,083</b>	<b>195,065</b>	<b>199,752</b>
<b>Total MRA and NON MRA Recyclables</b>	<b>258,856</b>	<b>345,573</b>	<b>411,543</b>	<b>493,728</b>
<b>Total Waste</b>	<b>435,271</b>	<b>521,656</b>	<b>606,607</b>	<b>693,480</b>
<b>Total Waste Generated*</b>	<b>418,250</b>	<b>521,656</b>	<b>606,607</b>	<b>693,480</b>

\* Total Waste Generated = Total Waste - (MSW Ash Recycled + Backend Scrap Metal Recycled) = 435,271 - (16,894 + 127) = 418,250 tons

# APPENDIX 10

**POPULATION, EMPLOYMENT, SOLID WASTE AND RECYCLING PROJECTIONS**  
(Facilities under control of Harford County and Municipalities)

I. Population and Employment Projections

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Residents	249,200	251,387	253,574	255,760	257,946	259,404	261,226	263,048	264,870	266,626	268,382	270,138	271,948
% change		0.88%	0.87%	0.86%	0.71%	0.71%	0.70%	0.70%	0.69%	0.66%	0.66%	0.65%	0.65%
Employees	124,500	129,296	133,848	138,400	140,780	143,160	145,540	147,920	150,300	151,320	152,340	153,360	154,388
% change		3.85%	3.52%	3.40%	1.72%	1.69%	1.66%	1.64%	1.61%	0.68%	0.67%	0.67%	0.67%

II. Waste and Recycling Quantities and Projections (Tons)

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Waste Generation Reduction Factor (1)	0%	0%	0%	0%	0%	0%	90%	90%	90%	90%	90%	90%	90%
HWDC													
Residential MSW	33,243	53,923	63,925	63,925	16,231	8,865	8,921	8,977	500	500	500	500	500
Commercial MSW	20,686	10,876	13,367	25,367	4,842	0	0	0	0	0	0	0	0
Mixed MSW	0	718	0	0	0	0	0	0	0	0	0	0	0
WTE Ash	23,465	32,446	15,000	10,000	5,000	0	0	0	0	0	0	0	0
Asbestos	8	7	7	7	7	7	7	7	7	7	7	7	7
Subtotal	77,402	97,970	92,299	99,299	26,080	8,872	8,928	8,984	507	507	507	507	507
Scrap Metal	1,096	770	1,000	1,009	1,016	1,023	1,030	1,037	1,045	1,051	1,058	1,065	1,072
Single Stream	15,646	17,455	19,201	21,121	5,808	0	0	0	0	0	0	0	0
Yard Waste	37,274	44,333	45,841	46,629	47,417	48,206	48,994	49,782	50,120	50,458	50,796	51,136	51,136
Electronics	157	141	150	151	152	153	155	156	157	158	159	160	161
Batteries	123	10	30	30	30	30	30	30	30	30	30	30	30
Mattresses	58	337	350	360	370	380	390	400	410	420	430	440	450
Used Oil	96	48	75	75	75	75	75	75	75	75	75	75	75
Antifreeze	5	4	5	5	5	5	5	5	5	5	5	5	5
Stale Gas	5	5	5	5	5	5	5	5	5	5	5	5	5
Textiles	1	20	20	20	20	20	20	20	20	20	20	20	20
Subtotal	54,461	63,123	66,676	69,404	54,898	49,897	50,704	51,510	51,866	52,222	52,578	52,936	52,954
HWTEF													
Residential MSW (From Harford County)	26,363	15,002	5,000	5,000	1,000	0	0	0	0	0	0	0	0
Residential MSW (From Baltimore County)	34,106	51,959	65,000	77,000	18,000	0	0	0	0	0	0	0	0
Commercial MSW (From Harford County)	51,209	44,491	42,000	30,000	9,000	0	0	0	0	0	0	0	0
Mixed MSW (From Harford County)	115	50	100	100	30	0	0	0	0	0	0	0	0
Compost Screenings	1,283	1,438	1,400	1,400	350	0	0	0	0	0	0	0	0
WTE Tires	4,715	5,515	5,000	5,000	1,250	0	0	0	0	0	0	0	0
Witness Burns	1,573	1,927	1,500	1,500	375	0	0	0	0	0	0	0	0
Subtotal	119,364	120,382	120,000	120,000	30,005	0	0	0	0	0	0	0	0
BALTIMORE COUNTY TRANSFER STATION													
Residential MSW (From Harford County)	0	0	0	0	51,694	69,058	69,495	69,931	70,367	70,787	71,206	71,625	72,044
Commercial MSW (From Harford County)	0	0	0	0	41,525	61,104	62,018	62,931	63,842	64,232	64,622	65,011	65,403
Mixed MSW (From Harford County)	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	93,219	130,162	131,513	132,862	134,209	135,019	135,828	136,637	137,448
Single Stream (From Harford County)	0	0	0	0	17,425	25,556	26,112	30,923	34,015	37,417	41,158	45,274	49,801
WATER & WASTEWATER													
WWTP Biosolids (Dry Tons) (2)	5,462	6,347	6,578	6,809	7,040	7,271	7,503	7,689	7,875	8,061	8,247	8,433	8,619
WWTP Residuals (Dry Tons) (3)	47	51	302	314	326	291	304	316	328	340	352	364	376
Sod Run WWTP Septage (Million Gallons)	17.52	18.25	20.00	20.20	20.40	20.60	20.80	21.00	21.20	21.40	21.70	21.90	22.10

Notes:

- (1) Factor represents multiplication factor applied to waste generation growth rates to account for economic conditions and likely changes of law decreasing waste disposal.  
(2) Reports from Sod Run WWTP, Joppaowne WWTP, Spring Meadows WWTP, APG WWTP, Aberdeen WWTP and Havre De Grace WWTP.  
(3) Reports from Abington WTP, Havre De Grace WTP, and Chapel Hill WTP.  
(4) Includes compost screenings from HWDC.

# APPENDIX 11

## Historical Recycling Rates

Year	MRA Rate (%)	Waste Diversion Rate (%)
2003	54.5	57.5
2004	60.11	64.11
2005	52.06	56.06
2006	52.8	56.8
2007	56.72	60.72
2008	58.64	62.64
2009	59.03	62.03
2010	56.77	59.77
2011	55.46	59.46
2012	54.79	59.79
2013	49.92	59.92

# APPENDIX 12

## Waste Diversion Since 2003

Year	MRA Rate (%)	Waste Diversion Rate (%)	MRA Materials (tons)						Non-MRA Recyclables (tons) <sup>(2)</sup>	Total Recycling (tons)
			Compostables	Glass	Metals	Paper	Plastic	Misc. <sup>(1)</sup>		
2003	54.5	57.5	75,943	1,379	5,707	48,690	457	34,007	82,946	249,129
2004	60.11	64.11	66,003	1,421	9,357	51,310	459	49,742	56,414	234,706
2005	52.06	56.06	68,161	1,405	9,019	52,845	454	48,595	28,482	208,961
2006	52.8	56.8	69,436	1,390	8,571	56,712	449	41,761	44,419	222,738
2007	56.72	60.72	68,624	1,504	8,218	65,812	486	44,783	48,411	237,838
2008	58.64	62.64	71,143	1,655	10,654	66,441	535	43,058	17,914	211,400
2009	59.03	62.03	57,413	1,855	10,786	69,197	599	36,774	16,348	192,972
2010	56.77	59.77	58,542	2,011	7,960	48,510	650	38,107	17,924	173,704
2011	55.46	59.46	51,392	2,312	9,300	62,027	747	36,095	9,343	171,216
2012	54.79	59.79	59,946	2,304	2,419	63,506	744	21,157	108,780	258,856
2013	49.92	59.92	57,512	2,570	7,424	54,590	830	4,929	5,713	133,569

Non-shaded boxes denote published tonnages from the Maryland Department of the Environment (MDE).

Shaded boxes are tonnages submitted by Harford County to MDE but not yet approved.

- (1) Miscellaneous items include textiles, electronics, pallets, animal protein.
- (2) Non-MRA recyclables include antifreeze, oil, soil, and construction and demolition debris.

# APPENDIX 13

**LIST OF HARFORD COUNTY-LICENSED COMMERCIAL HAULERS  
JUNE 2014**

<b>Company Name</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip Code</b>
A Better Haul	3107 Woolsey Drive	Churchville	MD	21028
American Sealing, LLC	1245 Old Pylesville Road	Whiteford	MD	21160
Ameriwaste LLC / Envirosolutions	7130 Kit Kat Road	Elkridge	MD	21075
Auston Contracting	1202 Paul's Lane	Joppa	MD	21085
Bartenfelder Sanitation Svc., Inc.	Business: 3341 Forge Hill Road	Street	MD	21154
	Mailing: P.O. Box 706	Forest Hill	MD	21050
Bratton Contracting	3897 Rock Run Road	Havre de Grace	MD	21078
City of Aberdeen Dept. of Public Works	60 N. Parke Street	Aberdeen	MD	21001
J. W. Clarke, Inc. t/a Clarke Refuse Service, Inc.	6 Riverside Drive	Baltimore	MD	21221
Coastal Trash Services LLC	Business: 1002 Pulaski Highway	Joppa	MD	21085
	Mailing: P.O. Box 3358	Salisbury	MD	21802
Cockey's Enterprises, Inc.	P.O. Box 126	Stevenson	MD	21153
Crass Hauling	809 Broad Street	Delta	PA	17314

**LIST OF HARFORD COUNTY-LICENSED COMMERCIAL HAULERS  
JUNE 2014**

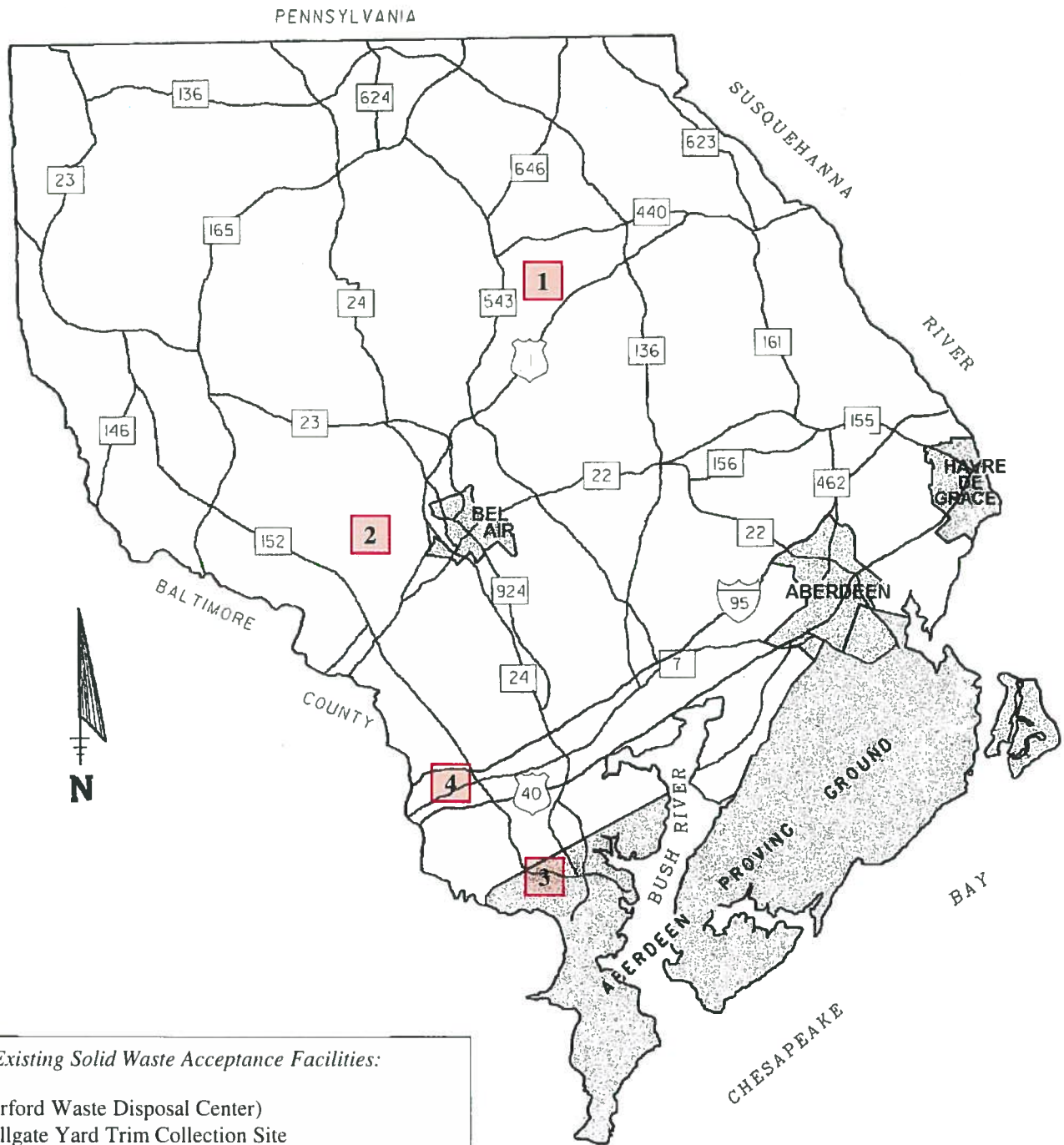
<b>Company Name</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip Code</b>
Dan's Hauling Service	1409 Ontario Street	Havre de Grace	MD	21078
Draw, Inc. t/a 1-800-GOT-JUNK	<u>Ofc:</u> 12528 Utica Road	Greenwood	DE	19950
	. 135 Teal Circle	Berlin	MD	21811
Gerber, Inc.	P. O. Box 942	Cockeysville	MD	21030
Grayhound Trash Removal	8301 Grey Eagle Drive	Upper Marlboro	MD	20772
Harford Trash Services, Inc.	3321 Scarboro Road	Street	MD	21154
Hutchins Property Services	3 Vale Road	Bel Air	MD	21014
IESI MD Corporation Roll-Off Express/Reliable Roll-Off	766 Queenstown Road	Severn	MD	21144
Republic Services (BFI/Allied Waste)	260 West Dickman Street	Baltimore	MD	21230
Six Nations, Inc.	<u>Bus:</u> 3558 Rodman Road	APG	MD	21005
	P.O. Box 95	Wayne	MI	48184
Thompson's Moving, Inc.	3520 Scarboro Road	Street	MD	21154
Town of Bel Air	705 E. Churchville Road	Bel Air	MD	21014
Waste Industries of MD LLC t/a Harford Sanitation Services	8634 Conowingo Road	Street	MD	21154
Waste Management of Maryland	3545 Fairfield Rd	Curtis Bay	MD	21226

**LIST OF HARFORD COUNTY-LICENSED COMMERCIAL HAULERS  
JUNE 2014**

<b>Company Name</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip Code</b>
Wee Haul Junk LLC	2440 Maxa Meadows Lane	Forest Hill	MD	21050

# APPENDIX 14

## County Map and Solid Waste Acceptance Facilities



*Existing Solid Waste Acceptance Facilities:*

1. Harford Waste Disposal Center)
2. Tollgate Yard Trim Collection Site
3. Harford Waste-To-Energy Facility
4. Auston Contracting Processing Center

# APPENDIX 15



February 10, 2014

Thomas C. Hilton, P.E.  
Deputy Director  
Harford County Department of Public Works  
Division of Environmental Services  
3135 Scarboro Road  
Street, Maryland 21154  
Ph. 410.638.3513  
Fax. 410.638.4019

Dear Mr. Hilton,

As you know, Pinnacle Communications has been retained by the Harford County Department of Public Works, Division of Environmental Services to perform a solid waste and recycling opinion phone survey to facilitate a public outreach effort in gaining input from County residents on existing and future solid waste and recycling services. The County will be using the results of the survey to assist in developing the upcoming comprehensive update to the Harford County Solid Waste Management Plan.

The script for the survey questions were developed by Harford County in consultation with Pinnacle Communications with the intent to obtain enough respondents from each individual County zip code to make the results statistically significant. The phone survey was conducted over a two-week period in early January 2014 whereby residents within each zip code were randomly called by Pinnacle staff. Over 700 residents contributed to the survey results. A report has been prepared which categorizes the responses by geographic region. We have attached the survey questionnaire and survey report for your review and use. We appreciate the opportunity to work with Harford County on this very important project.

Best Regards,

A handwritten signature in blue ink, appearing to read "Brian Haldeman".

Brian Haldeman  
Senior Vice President of Account Services  
Pinnacle Communications

**HARFORD COUNTY  
SOLID WASTE AND RECYCLING  
OPINION SURVEY**

[ASK TO SPEAK TO ADULT MEMBER of HOUSEHOLD] Hello. My name is \_\_\_\_\_ and I am calling on behalf of The Harford County Department of Public Works. The Department will soon begin developing its 10-year solid waste management plan for the 2015 to 2024 timeframe. Before this work begins, we would like your input on current services and what improvements you would like us to consider for the next 10 years. Your opinion is extremely valuable to us as it will help guide us in preparing our 10-year plan. Do you have time for a brief 5-minute survey?

## Section I – Demographics

1. To confirm, do you currently reside in Harford County, Maryland?

☐ Yes

☐ No **Thank & Terminate**

2. In which zip code do you currently reside?

- |                                |                               |                                 |                   |
|--------------------------------|-------------------------------|---------------------------------|-------------------|
| <input type="checkbox"/> 21001 | (Aberdeen)                    | Quota 65                        | Go to Q2a         |
| <input type="checkbox"/> 21009 | (Abingdon)                    | Quota 80                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21010 | (Gunpowder)                   | None required, can have up to 2 | Go to Sec II, Q1  |
| <input type="checkbox"/> 21013 | (Baldwin)                     | None required, can have up to 2 | Go to Sec II, Q1  |
| <input type="checkbox"/> 21014 | (Bel Air)                     | Quota 115                       | Go to Q2b         |
| <input type="checkbox"/> 21015 | (Bel Air)                     | Quota 80                        | Go to Q2b         |
| <input type="checkbox"/> 21017 | (Belcamp)                     | Quota 20                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21028 | (Churchville)                 | Quota 10                        | Go to Sec II, Q13 |
| <input type="checkbox"/> 21034 | (Darlington)                  | Quota 10                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21040 | (Edgewood)                    | Quota 75                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21047 | (Fallston)                    | Quota 40                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21050 | (Forest Hill)                 | Quota 50                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21051 | (Fork)                        | None required, can have up to 2 | Go to Sec II, Q1  |
| <input type="checkbox"/> 21078 | (Havre de Grace)              | Quota 55                        | Go to Q2c         |
| <input type="checkbox"/> 21084 | (Jarrettsville)               | Quota 25                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21085 | (Joppa)                       | Quota 50                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21087 | (Kingsville)                  | None required, can have up to 2 | Go to Sec II, Q1  |
| <input type="checkbox"/> 21111 | (Monkton)                     | None required, can have up to 2 | Go to Sec II, Q1  |
| <input type="checkbox"/> 21130 | (Perryman)                    | None required, can have up to 2 | Go to Sec II, Q1  |
| <input type="checkbox"/> 21132 | (Pylesville)                  | Quota 10                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21154 | (Street)                      | Quota 20                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21156 | (Upper Falls)                 | None required, can have up to 2 | Go to Sec II, Q1  |
| <input type="checkbox"/> 21160 | (Whiteford)                   | Quota 10                        | Go to Sec II, Q1  |
| <input type="checkbox"/> 21161 | (White Hall)                  | Quota 20                        | Go to Sec II, Q1  |
| <input type="checkbox"/> Other | <b>Thanks &amp; Terminate</b> |                                 |                   |

2a. You mentioned that you live in Aberdeen. Specifically, is your residence located within the boundaries of the official City of Aberdeen or the Greater Aberdeen Area?

- ☐ City of Aberdeen      **Thank & Terminate**
- ☐ Greater Aberdeen      **Go to Sec II, Q1**
- ☐ Don't know/unsure      **Thank & Terminate**

2b. You mentioned that you live in Bel Air. Specifically, is your residence located within the boundaries of the official Town of Bel Air or the Greater Bel Air Area?

- ☐ Town of Bel Air      **Thank & Terminate**
- ☐ Greater Bel Air      **Go to Sec II, Q1**
- ☐ Don't know/unsure      **Thank & Terminate**

2c. You mentioned that you live in Havre de Grace. Specifically, is your residence located within the boundaries of the official City of Havre de Grace or the Greater Havre de Grace Area?

- ☐ City of Havre de Grace      **Thank & Terminate**
- ☐ Greater Havre de Grace      **Go to Sec II, Q1**
- ☐ Don't know/unsure      **Thank & Terminate**

## **Section II – Trash and Recycling Collection**

1. How do you dispose of your trash and recycling?

- ☐ A private trash collector      **Go to Q1a**
- ☐ My HOA handles it      **Go to Q1a**
- ☐ My Landlord handles it      **Go to Q2**
- ☐ I take it to the Landfill      **Go to Q2**
- ☐ Other means      **Go to Q2**

1a: How often is your trash collected?

- ☐ Once per week
- ☐ Twice per week
- ☐ Don't know/Unsure

2: Have you ever dropped things off at the Landfill?

- ☐ Yes      **Ask Q2a**
- ☐ No      **Skip to Q3**

2a: Why did you use the Landfill? (**CHECK ALL THAT APPLY**)

- ☐ To get the trash/recycling out of the house before the next pickup day
- ☐ It was convenient
- ☐ To get rid of bulky items such as a mattress or furniture
- ☐ To dispose of yard waste
- ☐ To dispose of construction or demolition material
- ☐ To pick up mulch or compost
- ☐ Other (specify: \_\_\_\_\_)

3. Do you recycle any of the trash from your home?

- ☐ Yes Skip to Q4
- ☐ No Ask Q3a

3a. Which of the following statements best reflects your efforts in recycling?

- ☐ I don't recycle because I don't see the benefit
- ☐ I don't recycle because my landlord or HOA does not provide for recycling
- ☐ I don't recycle because it is too inconvenient
- ☐ It is not important to me

4. Trash collection in the County is provided by private trash collectors rather than as a public service by the County. On a scale of 1 – 5, what represents your level of satisfaction with how trash is collected with 1 being very dissatisfied having private trash collection and 5 being very satisfied having private trash collection?

- ☐ 1 Very Dissatisfied
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very Satisfied

5. Please rate your level of concern regarding the County's inability to control the cost of private trash collection on the following scale. On a scale of 1 – 5, with 1 being not at all concerned the County cannot control the cost of private trash collection and 5 being very concerned the County cannot control the cost of private trash collection.

- ☐ 1 Not at all Concerned
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very Concerned

### **Section III – Yard Trim Disposal**

1. Do you dispose of yard waste (grass, leaves or brush) at the Landfill?

- ☐ Yes
- ☐ No

2. Do you ever dispose of yard waste at the Tollgate Road drop-off facility?

- ☐ Yes
- ☐ No

3. Which yard waste drop-off facility is currently more convenient to you?

- ☐ Landfill
- ☐ Tollgate Road
- ☐ Don't know/Unsure

4. If the County would offer a yard waste drop-off facility in the southern portion of the County, along the Route 40 or I-95 corridor, would that be more convenient to you?

- ☐ Yes
- ☐ No
- ☐ Don't know/Unsure

5. Do you pick up mulch or compost from the Landfill?

- ☐ Yes
- ☐ No

### **Section IV – Disposal Facilities**

1. Currently the only location in the County available to residents to drop-off trash and recycling is at the Landfill. On a scale of 1 – 5, how convenient is this to you with 1 being very inconvenient and 5 being very convenient?

- ☐ 1 Very Inconvenient
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very Convenient

2. If the County would open up a second resident drop-off facility for trash and recyclables in the southern portion of the County along the Route 40 or I-95 corridor would that be more convenient to you than the Landfill?

- ☐ Yes
- ☐ No
- ☐ Don't know/Unsure

3. Which of the following is the most important to you as it relates to trash and recycling disposal?

- ☐ Cost
- ☐ Convenience
- ☐ Quality of service
- ☐ Being Green

4. Currently the County allows for a minimal amount of residential construction and demolition material for disposal at the Landfill.

Would you be willing to pay a fee to dispose of additional quantities?

- ☐ Yes
- ☐ No
- ☐ Don't know/unsure

Thank you for your time. Your opinion is valued. If you would like more information about the topics discussed today you can go to the County website at [www.harfordcountymd.gov](http://www.harfordcountymd.gov).

# HARFORD COUNTY SOLID WASTE AND RECYCLING OPINION SURVEY DATA REPORT JANUARY 2014



Prepared by:

**PINNACLE**

phone: 443.841.1084 | web: [pinnacleco.com](http://pinnacleco.com)

# RESEARCH BACKGROUND

---

- The Harford County Department of Public Works is in the preliminary stage of development for its 10-year solid waste management plan for the 2015 to 2024 timeframe.
- In anticipation of this, the Department commissioned research to provide an understanding of how the general public is currently utilizing their services.
- Additionally, they wanted to solicit feedback from the County residents to determine what changes should be considered for the next 10-year cycle.

# OVERVIEW OF METHODOLOGY

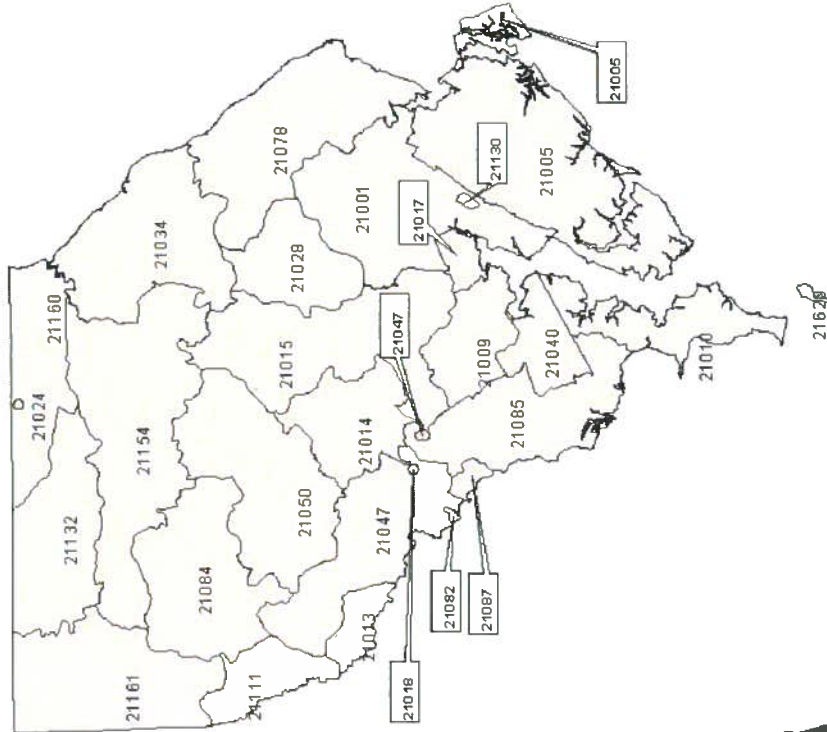
---

- 748 completed telephone interviews
- Aggregate Margin of Error:  $\pm 3.6\%$
- Stratified sampling method with proportional quotas set by zip code to match Harford County population statistics
- 5 minute survey
- Timeframe of interviewing: January 2014

# HARFORD COUNTY, MD

## HARFORD COUNTY, MARYLAND 2000 ZIP CODE AREAS

21001 Aberdeen  
 21005 Aberdeen Proving Ground, MD  
 21009 Abingdon  
 21010 Gunpowder  
 21013 Baldwin  
 21014 Bel Air  
 21015 Bel Air  
 21017 Belcamp  
 21018 Benson  
 21024 Cardiff  
 21028 Churchville  
 21034 Darlington  
 21040 Edgewood  
 21047 Fallston  
 21047 Fallston  
 21050 Forest Hill  
 21078 Havre De Grace  
 21082 Hydes  
 21084 Jarrettsville  
 21085 Joppa  
 21087 Kingsville  
 21111 Monkton  
 21130 Perryman  
 21132 Pylesville  
 21154 Street  
 21160 Whiteford  
 21161 White Hall  
 21620 Chestertown



# KEY SAMPLING REGIONS

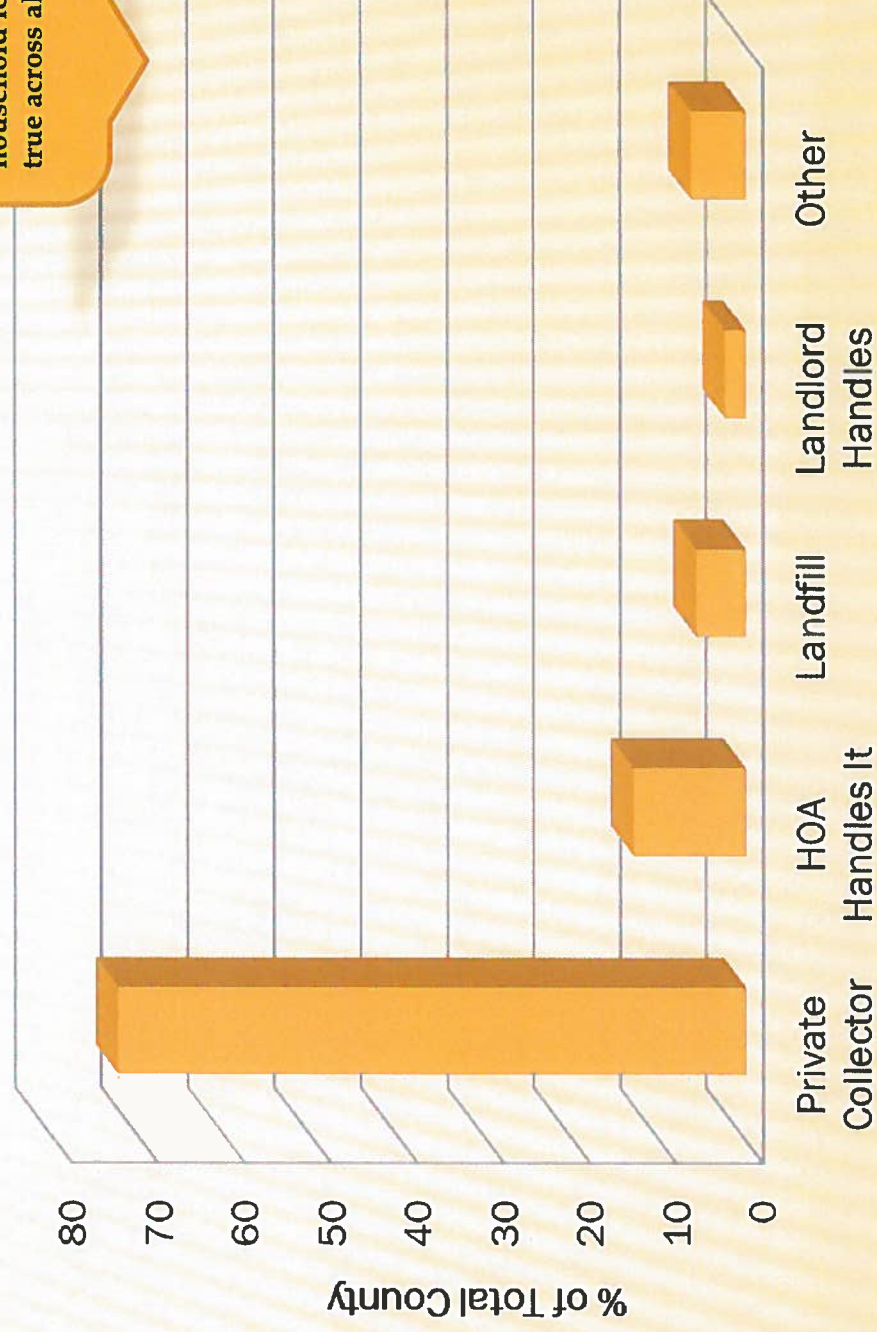
Zip Code	Town	Number of Completes	Region
21084	Jarrettsville	56	B- Northwest Region
21111	Monkton		
21132	Pylesville		
21161	White Hall		
21034	Darlington	35	C- Northeast Region
21154	Street		
21160	Whiteford		
*21001	Aberdeen	120	D- - Eastern Region
21028	Churchville		
*21078	Havre de Grace		
*21014	Bel Air	190	E- Central Region
*21015	Bel Air		
21047	Fallston	50	F- Western Region
21013	Baldwin		
21087	Kingsville		
21085	Joppa	106	G- South Western Region
21040	Edgewood		
21009	Abingdon	122	H- South Central Region
21017	Bel Camp		
21050	Forest Hill	64	I- North Central Region
21010	Gunpowder	5	J- Other
21051	Fork		
21130	Perryman		

\* Residents of the City of Aberdeen, Town of Bel Air & City of Havre de Grace were excluded from the survey

# **CATEGORY I - QUESTIONS OF TRASH AND RECYCLING COLLECTION PRACTICES**

# HOW DO YOU DISPOSE OF YOUR TRASH AND RECYCLING?

The vast majority of Harford County residents arrange for private trash collection at the household level. This holds true across all regions.



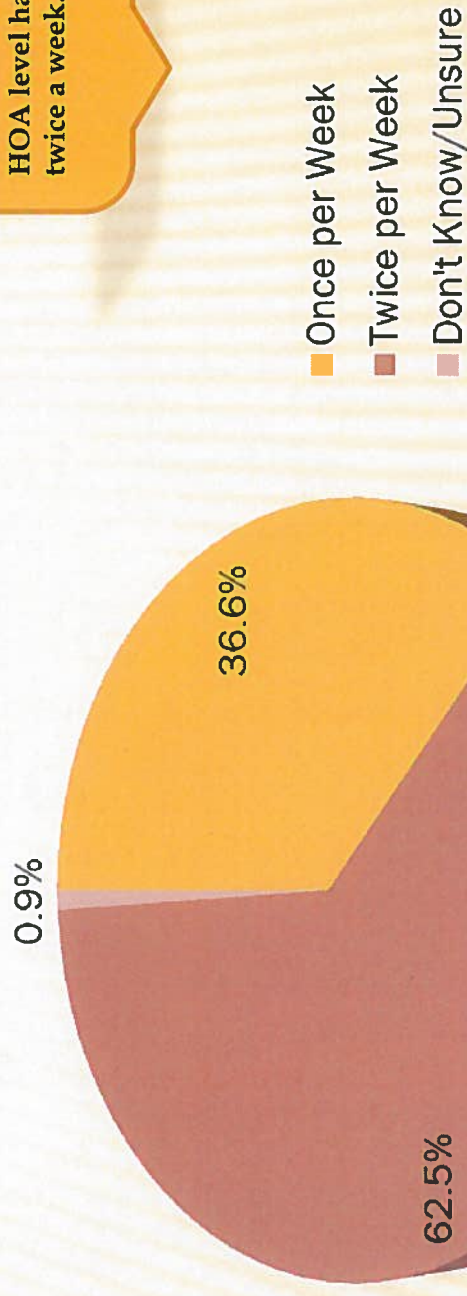
# RESIDENTIAL TRASH AND COLLECTION METHODS BY REGION

Relative to other regions, the Whiteford, Street, Darlington region is significantly more likely to utilize the landfill, while Abingdon, Belcamp region is much more likely to rely upon their HOA.

	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	56	35	120	190	50	106	122	64	5
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
A private trash collector	48	22	83	155	42	71	70	49	3
	85.7%	62.9%	69.2%	81.6%	84.0%	67.0%	57.4%	76.6%	60.0%
My HOA handles it	1	-	13	20	2	14	41	5	1
	1.8%		10.8%	10.5%	4.0%	13.2%	33.6%	7.8%	20.0%
I take it to the Landfill	5	10	8	3	4	2	4	6	1
	8.9%	28.6%	6.7%	1.6%	8.0%	1.9%	3.3%	9.4%	20.0%
My Landlord handles it	-	-	3	2	-	8	3	2	-
			2.5%	1.1%		7.5%	2.5%	3.1%	
Other means	2	3	13	10	2	11	4	2	-
	3.6%	8.6%	10.8%	5.3%	4.0%	10.4%	3.3%	3.1%	

# HOW OFTEN IS YOUR TRASH COLLECTED?

Nearly  $\frac{2}{3}$  of those who arrange private trash collection at either the household or HOA level have collection twice a week.



# TRASH COLLECTION FREQUENCY BY REGION

The White Hall, Pylesville,  
Monkton, Jarrettsville,  
Whiteford, Street, Darlington,  
Churchville, Havre de Grace,  
Aberdeen regions are  
significantly more likely to  
have trash & recycling pickup  
just once per week.

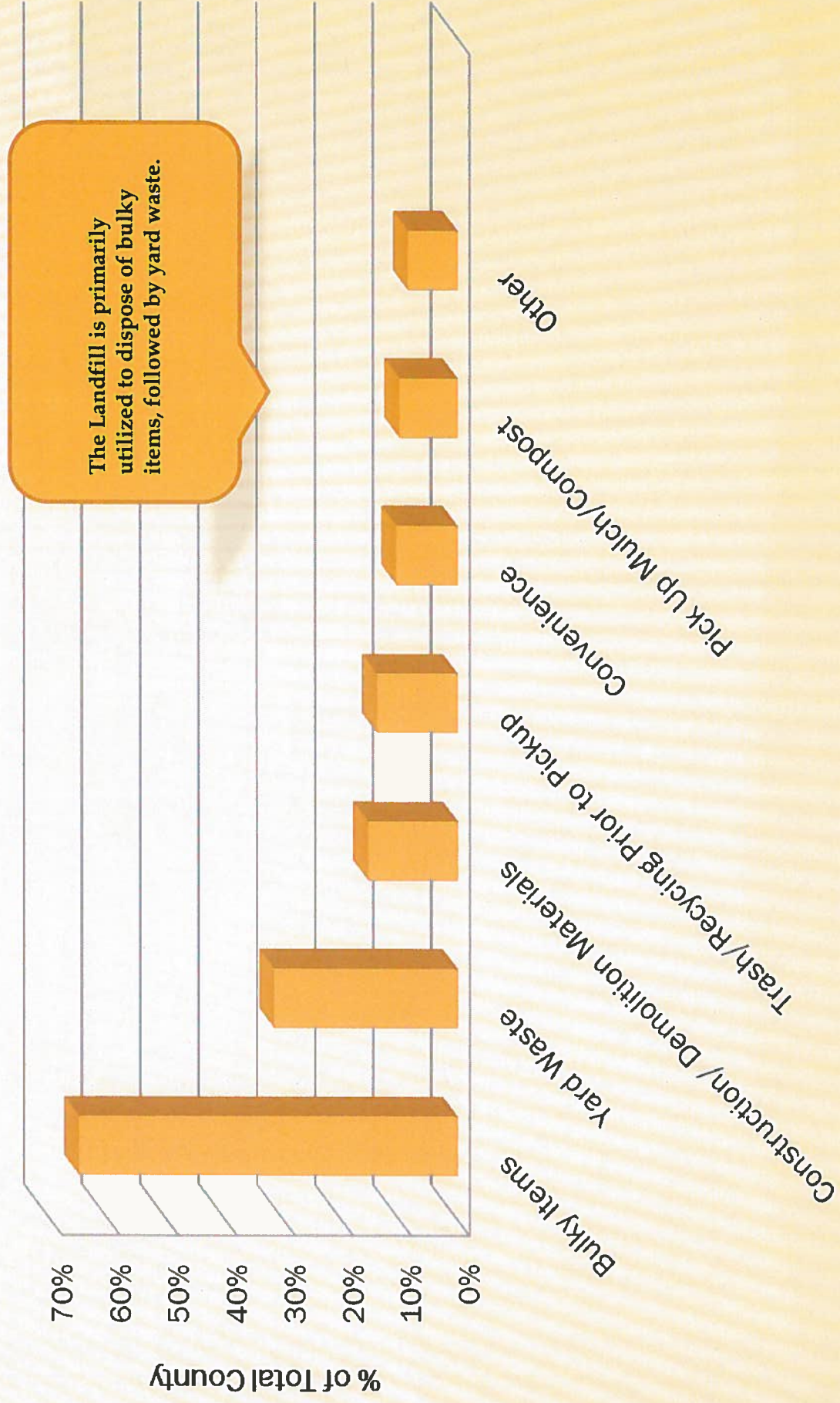
	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
TRASH/RECYCLING HANDLED BY HOA OR PRIVATE COLLECTOR	49	22	96	175	44	85	111	54	4
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	Once per week	21	88	31	8	25	22	8	2
Twice per week	59.2%	95.5%	91.7%	17.7%	18.2%	29.4%	19.8%	14.8%	50.0%
	20	1	7	142	36	59	87	46	2
	40.8%	4.5%	7.3%	81.1%	81.8%	69.4%	78.4%	85.2%	50.0%
Don't know/Unsure	-	-	1	2	-	1	2	-	-
			1.0%	1.1%		1.2%	1.8%		

# HAVE YOU EVER DROPPED THINGS OFF AT THE LANDFILL?

71% of County residents have previously utilized the Landfill. The regions in closer proximity to the Landfill are more likely to have dropped off items.

	Total	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	748	56	35	120	190	50	106	122	64	5
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yes	531	49	30	76	148	35	58	81	51	3
	71.0%	87.5%	85.7%	63.3%	77.9%	70.0%	54.7%	66.4%	79.7%	60.0%
No	217	7	5	44	42	15	48	41	13	2
	29.0%	12.5%	14.3%	36.7%	22.1%	30.0%	45.3%	33.6%	20.3%	40.0%

# WHY DID YOU USE THE LANDFILL?



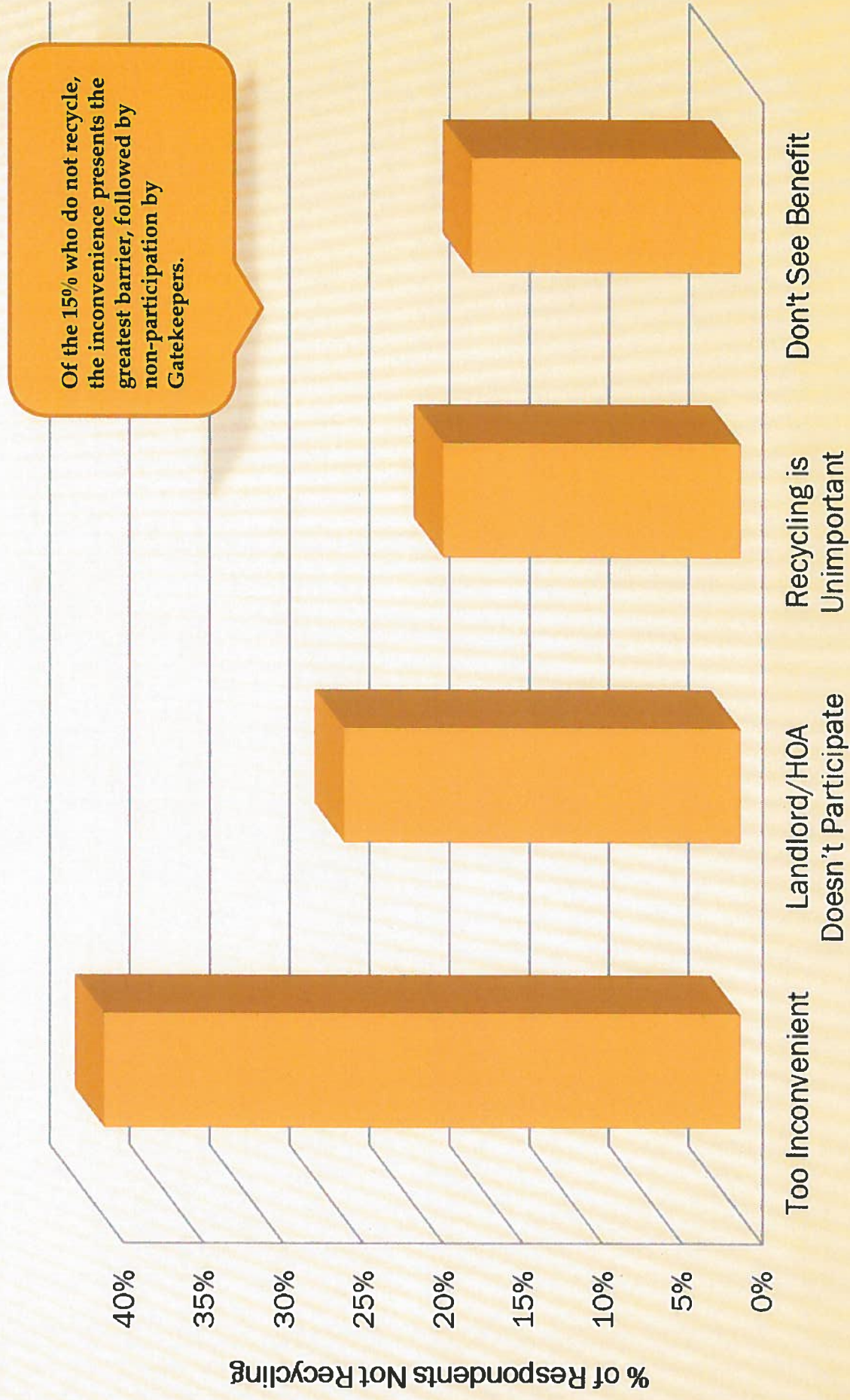
# REASONS WHY RESIDENTS USED THE LANDFILL BY REGION

	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
HAVE USED LANDFILL	49	30	76	148	35	58	81	51	3
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
To get rid of bulky items such as a mattress or furniture	37	15	48	92	24	38	56	34	1
	75.5%	50.0%	63.2%	62.2%	68.6%	65.5%	69.1%	66.7%	33.3%
To dispose of yard waste	12	7	17	52	16	16	27	19	2
	24.5%	23.3%	22.4%	35.1%	45.7%	27.6%	33.3%	37.3%	66.7%
To dispose of construction or demolition material	12	8	8	24	4	6	13	7	-
	24.5%	26.7%	10.5%	16.2%	11.4%	10.3%	16.0%	13.7%	
To get the trash/recycling out of the house before the next pickup day	6	11	14	13	4	7	12	7	-
	12.2%	36.7%	18.4%	8.8%	11.4%	12.1%	14.8%	13.7%	
It was convenient	6	8	3	14	3	6	7	9	-
	12.2%	26.7%	3.9%	9.5%	8.6%	10.3%	8.6%	17.6%	
To pick up mulch or compost	9	5	4	13	2	5	7	8	-
	18.4%	16.7%	5.3%	8.8%	5.7%	8.6%	8.6%	15.7%	
Other	5	5	6	10	2	4	7	6	-
	10.2%	16.7%	7.9%	6.8%	5.7%	6.9%	8.6%	11.8%	

# DO YOU RECYCLE? (REGIONAL BREAKDOWN)

	Total	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	748	56	35	120	190	50	106	122	64	5
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yes	635	50	30	103	171	49	70	102	55	5
	84.9%	89.3%	85.7%	85.8%	90.0%	98.0%	66.0%	83.6%	85.9%	100.0%
No	113	6	5	17	19	1	36	20	9	-
	15.1%	10.7%	14.3%	14.2%	10.0%	2.0%	34.0%	16.4%	14.1%	-

# EXPLANATION FOR THOSE NOT RECYCLING



# EXPLANATION FOR THOSE NOT RECYCLING BY REGION

	Total	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
DO NOT RECYCLE	113	6	5	17	19	1	36	20	9	-
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
I don't recycle because it is too inconvenient	45	2	2	6	9	1	12	9	4	-
	39.8%	33.3%	40.0%	35.3%	47.4%	100.0%	33.3%	45.0%	44.4%	
I don't recycle because my landlord or HOA does not provide for recycling	28	-	-	4	4	-	13	5	2	-
	24.8%			23.5%	21.1%		36.1%	25.0%	22.2%	
I don't recycle because it is not important to me	21	4	1	3	2	-	6	4	1	-
	18.6%	66.7%	20.0%	17.6%	10.5%		16.7%	20.0%	11.1%	
I don't recycle because I don't see the benefit	19	-	2	4	4	-	5	2	2	-
	16.8%		40.0%	23.5%	21.1%		13.9%	10.0%	22.2%	

# SATISFACTION WITH PRIVATE TRASH COLLECTION BY REGION

	Total	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	748	56	35	120	190	50	106	122	64	5
5 Very Satisfied	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	316	26	19	55	80	22	39	40	32	3
	42.2%	46.4%	54.3%	45.8%	42.1%	44.0%	36.8%	32.8%	50.0%	60.0%
4	186	10	4	29	52	15	29	38	9	-
	24.9%	17.9%	11.4%	24.2%	27.4%	30.0%	27.4%	31.1%	14.1%	
3	144	11	7	24	39	5	20	24	13	1
	19.3%	19.6%	20.0%	20.0%	20.5%	10.0%	18.9%	19.7%	20.3%	20.0%
2	39	-	-	3	8	5	7	12	4	-
	5.2%			2.5%	4.2%	10.0%	6.6%	9.8%	6.3%	
1 Very Dissatisfied	63	9	5	9	11	3	11	8	6	1
	8.4%	16.1%	14.3%	7.5%	5.8%	6.0%	10.4%	6.6%	9.4%	20.0%
Mean	3.87	3.79	3.91	3.98	3.96	3.96	3.74	3.74	3.89	3.80

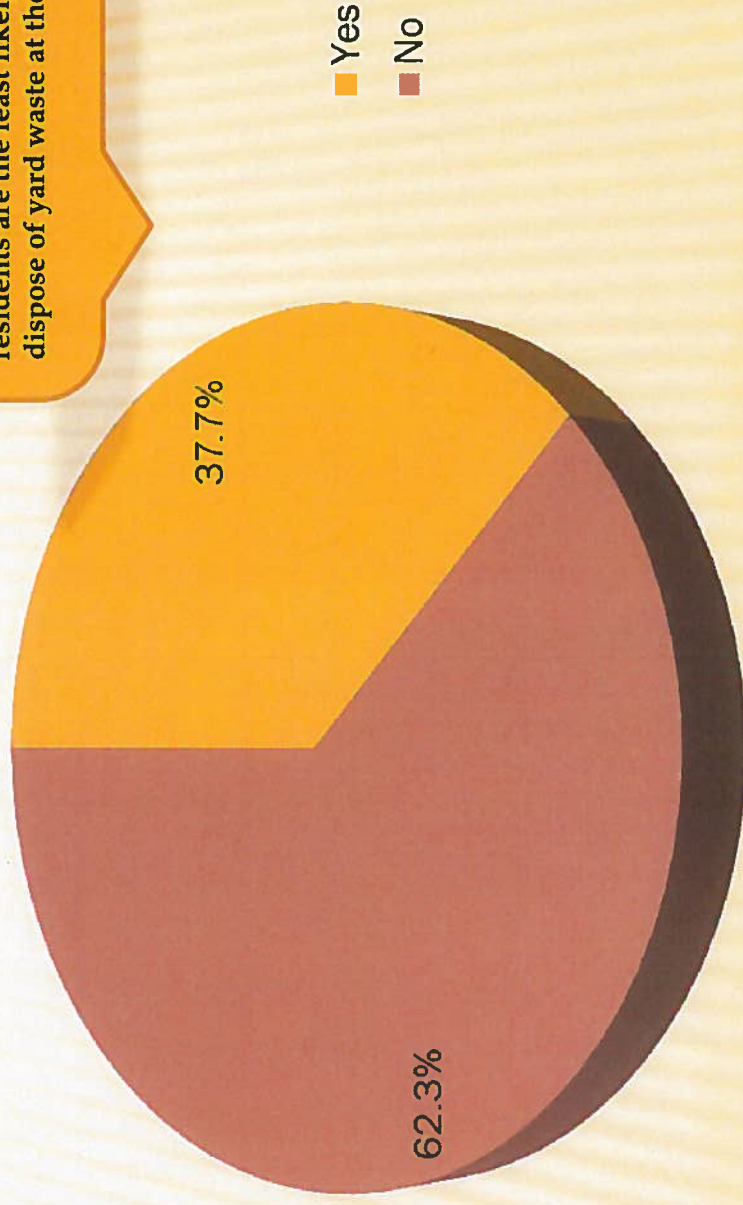
# RATINGS OF CONCERN OF COUNTY'S INABILITY TO CONTROL COSTS OF PRIVATE TRASH COLLECTION

	Total	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	748	56	35	120	190	50	106	122	64	5
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
CONCERNED (NET)	356	27	14	59	86	25	50	63	30	2
	47.6%	48.2%	40.0%	49.2%	45.3%	50.0%	47.2%	51.6%	46.9%	40.0%
5 Very Concerned	247	21	10	37	59	16	39	45	19	1
	33.0%	37.5%	28.6%	30.8%	31.1%	32.0%	36.8%	36.9%	29.7%	20.0%
4	109	6	4	22	27	9	11	18	11	1
	14.6%	10.7%	11.4%	18.3%	14.2%	18.0%	10.4%	14.8%	17.2%	20.0%
3	191	15	10	32	49	11	31	24	18	1
	25.5%	26.8%	28.6%	26.7%	25.8%	22.0%	29.2%	19.7%	28.1%	20.0%
NOT CONCERNED (NET)	201	14	11	29	55	14	25	35	16	2
	26.9%	25.0%	31.4%	24.2%	28.9%	28.0%	23.6%	28.7%	25.0%	40.0%
2	62	6	3	10	20	6	4	10	3	-
	8.3%	10.7%	8.6%	8.3%	10.5%	12.0%	3.8%	8.2%	4.7%	
1 Not at all Concerned	139	8	8	19	35	8	21	25	13	2
	18.6%	14.3%	22.9%	15.8%	18.4%	16.0%	19.8%	20.5%	20.3%	40.0%

# **CATEGORY II - QUESTIONS ON YARD TRIM DISPOSAL**

# DO YOU DISPOSE OF YARD WASTE AT THE HWDC?

Just over 1/3 of County residents dispose of yard waste at the HWDC. Residents in the Bel Air region are significantly more likely to do so (50.5%), followed by Forest Hill residents (45.3%). Joppa-Edgewood residents are the least likely (26.4%) to dispose of yard waste at the HWDC.

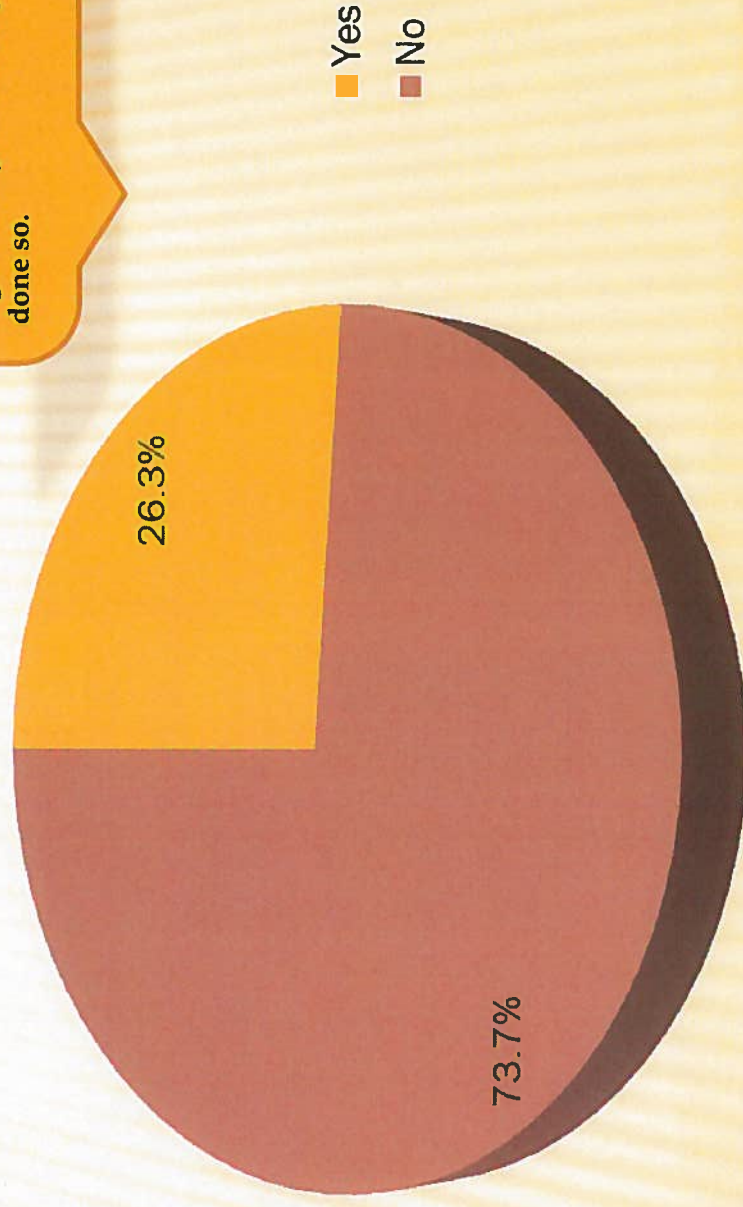


# DO YOU DISPOSE OF YARD WASTE AT THE HWDC? – REGIONAL RESPONSES

	White Hall Pylesville Monkton Jarrettsville _____	Whiteford Street Darlington _____	Churchville Havre de Grace Aberdeen _____	Bel Air _____	Fallston Baldwin Kingsville _____	Joppa Edgewood _____	Abingdon Belcamp _____	Forest Hill _____	Gunpowder Fork Perryman _____
	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	56 100.0%	35 100.0%	120 100.0%	190 100.0%	50 100.0%	106 100.0%	122 100.0%	64 100.0%	5 100.0%
Yes	17 30.4%	12 34.3%	34 28.3%	96 50.5%	17 34.0%	28 26.4%	47 38.5%	29 45.3%	2 40.0%
No	39 69.6%	23 65.7%	86 71.7%	94 49.5%	33 66.0%	78 73.6%	75 61.5%	35 54.7%	3 60.0%

# DO YOU EVER DISPOSE OF YARD WASTE AT THE TOLLGATE DROP-OFF FACILITY?

Only about  $\frac{1}{4}$  of County residents have disposed of yard waste at the Tollgate Road Drop-off Facility. The regions in closer proximity, such as Bel Air, Forest Hill and Fallston-Baldwin-Kingsville were significantly more likely to have done so.

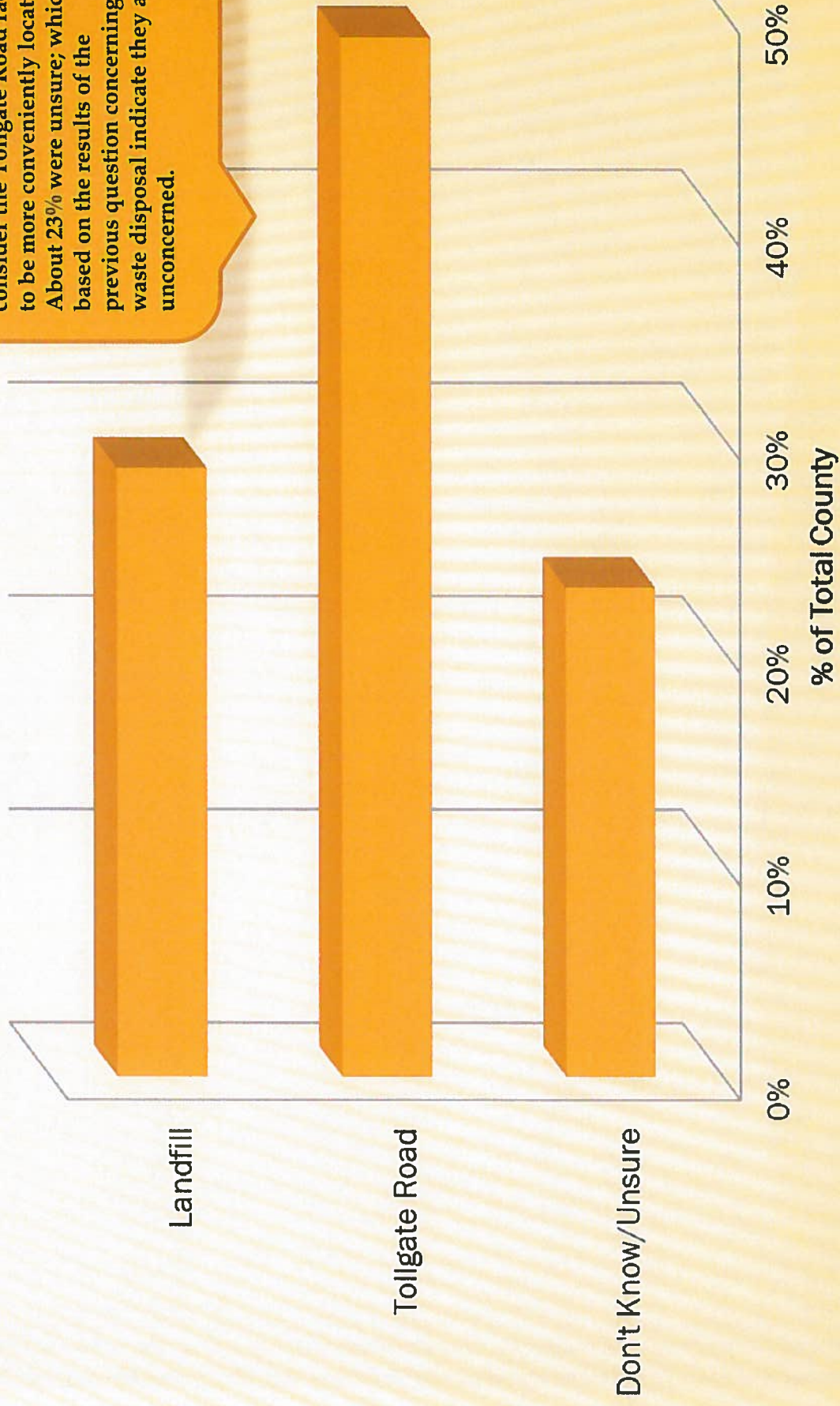


# DO YOU EVER DISPOSE OF YARD WASTE AT THE TOLLGATE DROP-OFF FACILITY? - REGIONAL RESPONSES

	White Hall Pylesville Monkton Jarrettsville ----- (B)	Whiteford Street Darlington ----- (C)	Churchville Havre de Grace Aberdeen ----- (D)	Bel Air ----- (E)	Fallston Baldwin Kingsville ----- (F)	Joppa Edgewood ----- (G)	Abingdon Belcamp ----- (H)	Forest Hill ----- (I)	Gunpowder Fork Perryman ----- (J)
Total	56 100.0%	35 100.0%	120 100.0%	190 100.0%	50 100.0%	106 100.0%	122 100.0%	64 100.0%	5 100.0%
Yes	10 17.9%	2 5.7%	8 6.7%	84 44.2%	26 52.0%	20 18.9%	26 21.3%	20 31.3%	1 20.0%
No	46 82.1%	33 94.3%	112 93.3%	106 55.8%	24 48.0%	86 81.1%	96 78.7%	44 68.8%	4 80.0%

# WHICH YARD-WASTE DROP-OFF FACILITY IS MORE CONVENIENT?

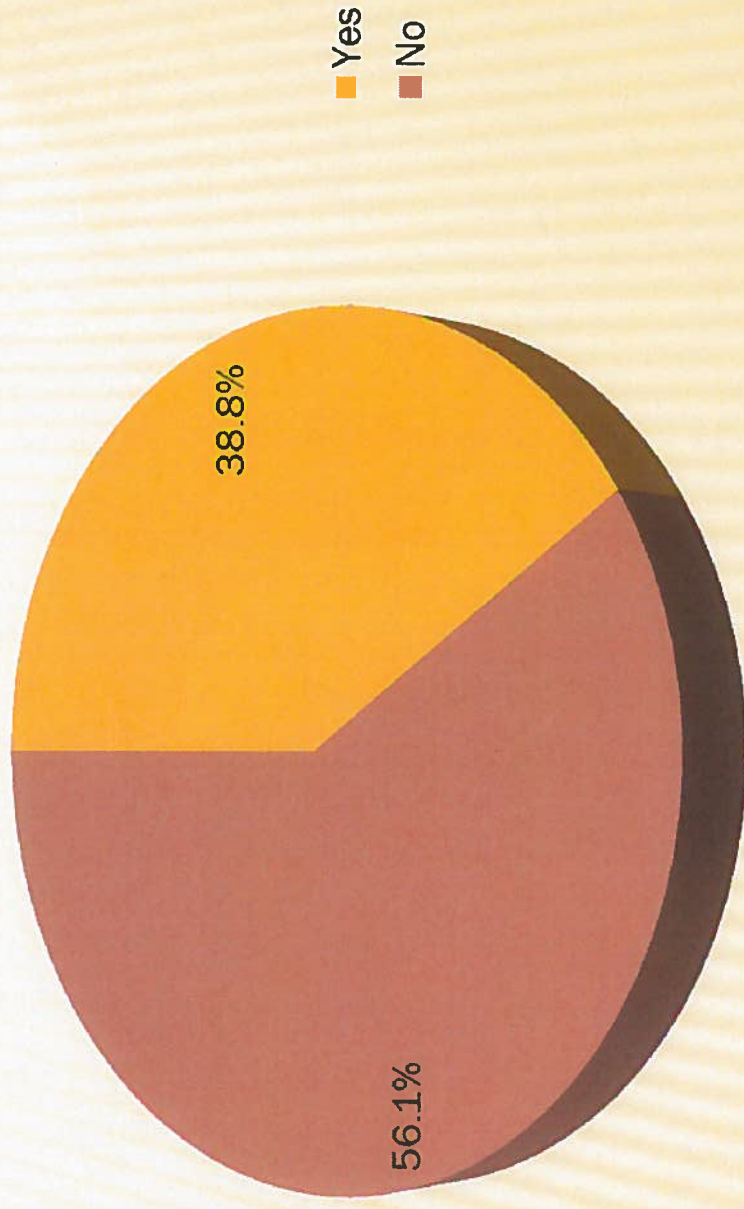
Nearly half of County residents consider the Tollgate Road facility to be more conveniently located. About 23% were unsure; which, based on the results of the previous question concerning yard waste disposal indicate they are unconcerned.



# WHICH YARD WASTE DROP-OFF FACILITY IS MORE CONVENIENT? - REGIONAL RESPONSES

	White Hall Pylesville Monkton Jarrettsville -----	Whiteford Street Darlington -----	Churchville Havre de Grace Aberdeen -----	Bel Air -----	Fallston Baldwin Kingsville -----	Joppa Edgewood -----	Abingdon Belcamp -----	Forest Hill -----	Gunpowder Fork Perryman -----
	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	56 100.0%	35 100.0%	120 100.0%	190 100.0%	50 100.0%	106 100.0%	122 100.0%	64 100.0%	5 100.0%
Landfill	25 44.6%	30 85.7%	54 45.0%	41 21.6%	2 4.0%	16 15.1%	24 19.7%	20 31.3%	1 20.0%
Tollgate Road	15 26.8%	-	20 16.7%	126 66.3%	38 76.0%	57 53.8%	73 59.8%	32 50.0%	3 60.0%
Don't know/Unsure	16 28.6%	5 14.3%	46 38.3%	23 12.1%	10 20.0%	33 31.1%	25 20.5%	12 18.8%	1 20.0%

# IF A YARD WASTE DROP-OFF FACILITY WAS AVAILABLE IN THE SOUTHERN PORTION OF THE COUNTY WOULD THAT BE MORE CONVENIENT?



# IF A YARD WASTE DROP-OFF FACILITY WAS AVAILABLE IN THE SOUTHERN PORTION OF THE COUNTY WOULD THAT BE MORE CONVENIENT?

## - REGIONAL RESPONSES

The regions most in favor of a facility in the southern portion of the County include Churchville, Havre de Grace, Aberdeen and Edgewood, Abingdon and Belcamp which all fall along the Route 40/I-95 corridor.

	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	56 100.0%	35 100.0%	120 100.0%	190 100.0%	50 100.0%	106 100.0%	122 100.0%	64 100.0%	5 100.0%
Yes	1 1.8%	-	64 53.3%	30 15.8%	10 20.0%	86 81.1%	86 70.5%	11 17.2%	2 40.0%
No	53 94.6%	35 100.0%	43 35.8%	156 82.1%	39 78.0%	14 13.2%	27 22.1%	50 78.1%	3 60.0%
Don't know/Unsure	2 3.6%	-	13 10.8%	4 2.1%	1 2.0%	6 5.7%	9 7.4%	3 4.7%	-

# DO YOU PICK-UP MULCH FROM THE HWDCC? – REGIONAL RESPONSES

	Total	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre De Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	748	56	35	120	190	50	106	122	64	5
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yes	167	20	15	29	47	8	15	17	16	-
	22.3%	35.7%	42.9%	24.2%	24.7%	16.0%	14.2%	13.9%	25.0%	-
No	581	36	20	91	143	42	91	105	48	5
	77.7%	64.3%	57.1%	75.8%	75.3%	84.0%	85.8%	86.1%	75.0%	100.0%

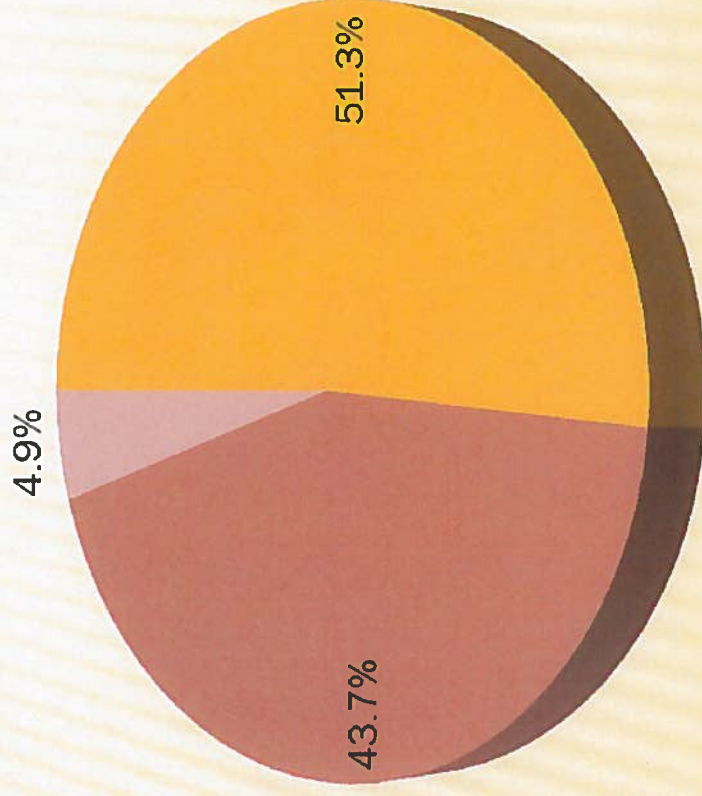
**CATEGORY III –  
QUESTIONS ON RESIDENT SOLID WASTE  
AND RECYCLING DROP-OFF LOCATIONS**

# HOW CONVENIENT IS THE HWDC?

## - REGIONAL RESPONSE

	Total	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	748	56	35	120	190	50	106	122	64	5
100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
CONVENIENT (NET)	210	21	30	29	65	8	15	18	24	-
	28.1%	37.5%	85.7%	24.2%	34.2%	16.0%	14.2%	14.8%	37.5%	
5 Very Convenient	124	15	27	18	25	4	13	12	10	-
	16.6%	26.8%	77.1%	15.0%	13.2%	8.0%	12.3%	9.8%	15.6%	
4	86	6	3	11	40	4	2	6	14	-
	11.5%	10.7%	8.6%	9.2%	21.1%	8.0%	1.9%	4.9%	21.9%	
3	195	18	4	34	57	10	22	29	18	3
	26.1%	32.1%	11.4%	28.3%	30.0%	20.0%	20.8%	23.8%	28.1%	60.0%
INCONVENIENT (NET)	343	17	1	57	68	32	69	75	22	2
	45.9%	30.4%	2.9%	47.5%	35.8%	64.0%	65.1%	61.5%	34.4%	40.0%
2	124	7	-	17	34	19	12	28	7	-
	16.6%	12.5%		14.2%	17.9%	38.0%	11.3%	23.0%	10.9%	
1 Very Inconvenient	219	10	1	40	34	13	57	47	15	2
	29.3%	17.9%	2.9%	33.3%	17.9%	26.0%	53.8%	38.5%	23.4%	40.0%

# IF A SECOND RESIDENT SOLID WASTE AND RECYCLING DROP-OFF LOCATION EXISTED IN THE SOUTHERN PORTION OF THE COUNTY WOULD THAT BE MORE CONVENIENT?



■ Yes  
■ No  
■ Don't Know/Unsure

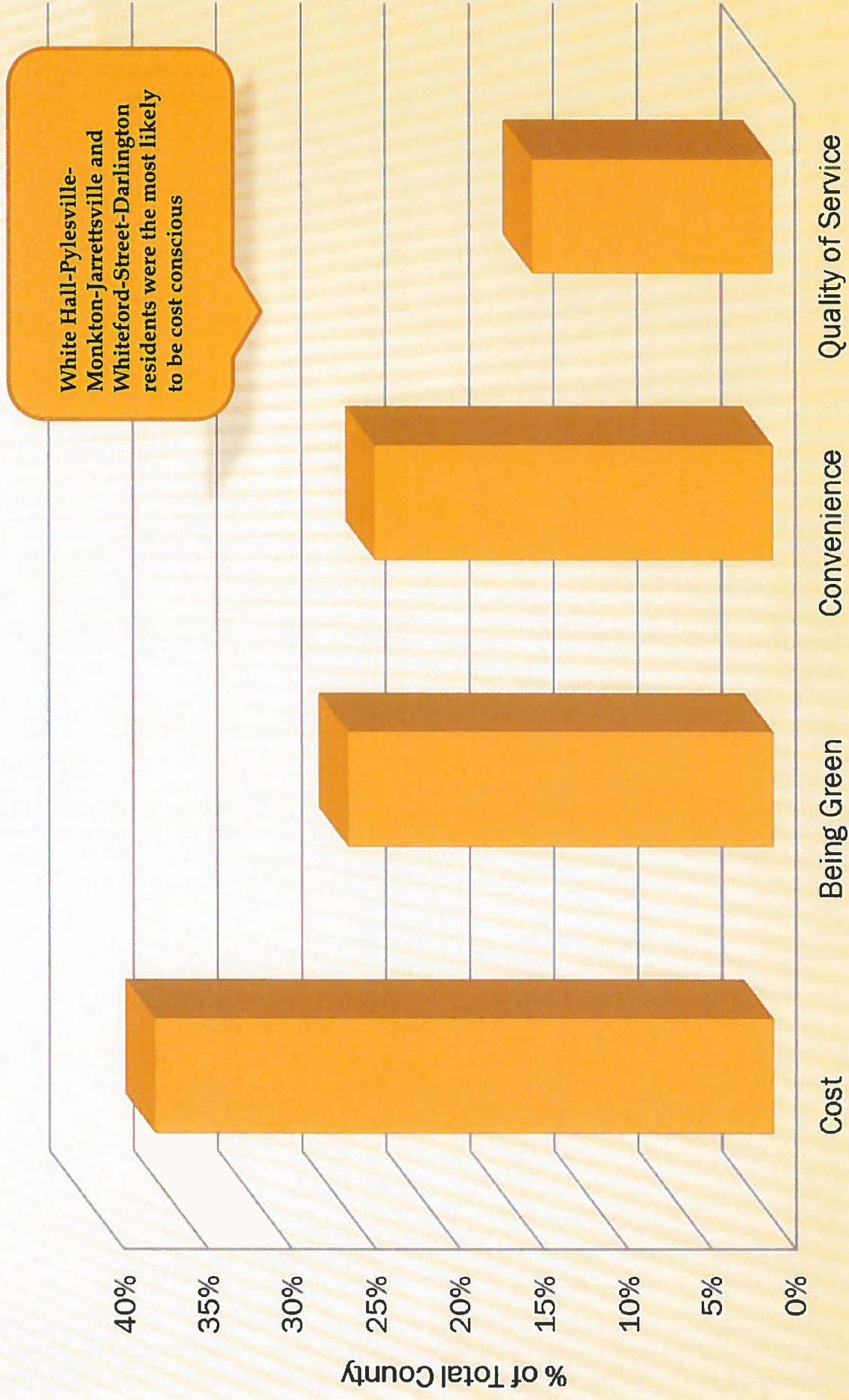
A modest majority would prefer a second drop off facility in the southern portion of the County. This is largely driven by the populous regions of the County located along that corridor.

# IF A SECOND RESIDENT SOLID WASTE AND RECYCLING DROP-OFF LOCATION EXISTED IN THE SOUTHERN PORTION OF THE COUNTY WOULD THAT BE MORE CONVENIENT? – REGIONAL RESPONSES

The regions where a majority favor a second drop-off facility in the southern portion of the County include Churchville, Havre de Grace, Aberdeen, Fallston, Baldwin, Kingsville Joppa, Edgewood, Abingdon and Belcamp

	White Hall Pylesville Monkton Jarrettsville (B)	Whiteford Street Darlington (C)	Churchville Havre de Grace Aberdeen (D)	Bel Air (E)	Fallston Baldwin Kingsville (F)	Joppa Edgewood (G)	Abingdon Belcamp (H)	Forest Hill (I)	Gunpowder Fork Perryman (J)
Total	56 100.0%	35 100.0%	120 100.0%	190 100.0%	50 100.0%	106 100.0%	122 100.0%	64 100.0%	5 100.0%
Yes	3 5.4%	-	79 65.8%	65 34.2%	29 58.0%	87 82.1%	109 89.3%	9 14.1%	3 60.0%
No	52 92.9%	35 100.0%	28 23.3%	117 61.6%	19 38.0%	13 12.3%	10 8.2%	51 79.7%	2 40.0%
Don't know/Unsure	1 1.8%	-	13 10.8%	8 4.2%	2 4.0%	6 5.7%	3 2.5%	4 6.3%	-

# WHICH IS MORE IMPORTANT AS IT RELATES TO TRASH AND RECYCLING DISPOSAL?



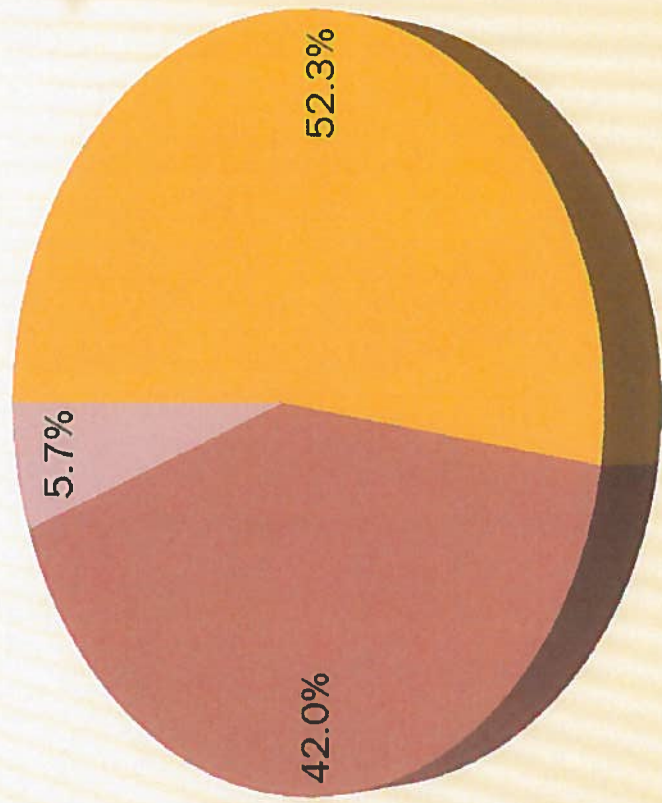
# WHICH IS MORE IMPORTANT AS IT RELATES TO TRASH AND RECYCLING DISPOSAL?

## - REGIONAL RESPONSES

	Total	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	748	56	35	120	190	50	106	122	64	5
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	275	25	17	38	72	20	40	36	26	1
Cost	36.8%	44.6%	48.6%	31.7%	37.9%	40.0%	37.7%	29.5%	40.6%	20.0%
	189	10	5	35	44	14	32	34	14	1
	25.3%	17.9%	14.3%	29.2%	23.2%	28.0%	30.2%	27.9%	21.9%	20.0%
Convenience	177	11	11	32	42	10	21	33	16	1
	23.7%	19.6%	31.4%	26.7%	22.1%	20.0%	19.8%	27.0%	25.0%	20.0%
	107	10	2	15	32	6	13	19	8	2
Quality of service	14.3%	17.9%	5.7%	12.5%	16.8%	12.0%	12.3%	15.6%	12.5%	40.0%

# WILLING TO PAY ADDITIONAL FEES IN ORDER TO DISPOSE OF ADDITIONAL CONSTRUCTION AND DEMOLITION DEBRIS ABOVE CURRENT RESTRICTIONS?

There appears to be demand to dispose of higher quantities of construction & demolition materials, with 52% of residents indicating they would pay an additional fee to do so.



- Yes
- No
- Don't Know/Unsure

# WILLING TO PAY ADDITIONAL FEES IN ORDER TO DISPOSE OF ADDITIONAL CONSTRUCTION AND DEMOLITION DEBRIS ABOVE CURRENT RESTRICTIONS? – REGIONAL RESPONSES

	Total	White Hall Pylesville Monkton Jarrettsville	Whiteford Street Darlington	Churchville Havre de Grace Aberdeen	Bel Air	Fallston Baldwin Kingsville	Joppa Edgewood	Abingdon Belcamp	Forest Hill	Gunpowder Fork Perryman
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Total	748	56	35	120	190	50	106	122	64	5
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yes	391	33	14	61	100	26	54	67	31	5
	52.3%	58.9%	40.0%	50.8%	52.6%	52.0%	50.9%	54.9%	48.4%	100.0%
No	314	18	20	47	81	21	48	49	30	-
	42.0%	32.1%	57.1%	39.2%	42.6%	42.0%	45.3%	40.2%	46.9%	
Don't know/Unsure	43	5	1	12	9	3	4	6	3	-
	5.7%	8.9%	2.9%	10.0%	4.7%	6.0%	3.8%	4.9%	4.7%	

# APPENDIX 16



# HARFORD COUNTY, MARYLAND

HARFORD COUNTY SOLID WASTE MANAGEMENT PLAN  
PUBLIC INPUT MEETING  
JULY 15, 2014

# **PUBLIC MEETING**

## **Agenda**

- **Planning Period & Schedule**
- **Existing Solid Waste Disposal Facilities**
- **Proposed Disposal Plan beginning March 2016**
- **Solid Waste Phone Survey**
- **Issues to Consider in Future**
  - **Public Convenience**
  - **MDE Zero-Waste Plan**
  - **Financial Sustainability**
  - **Efficient & Cost-Effective Trash & Recycling Collection**
- **Comments**

# PLANNING PERIOD

- **10- Year Planning Period**  
**March 2015 – March 2024**

## **SCHEDULE**

- **January 2014 - Solid Waste/Recycling  
Opinion Phone Survey**
- **July 2014 - Public Input Meeting**
- **Fall 2014 - Develop Draft Plan**
- **January 2015 - Introduce Legislation**
- **February 2015 - Public Hearing on Proposed  
Plan w/ County Council**
- **March 2015 - Submit Final Plan to MDE**

## EXISTING DISPOSAL FACILITIES

- **Harford Waste-to-Energy Facility**
- **Harford Waste Disposal Center**
- **Tollgate Yard Trim Drop-Off Facility**



# HARFORD WASTE TO ENERGY FACILITY

Magnolia Road, Joppa



## Facts

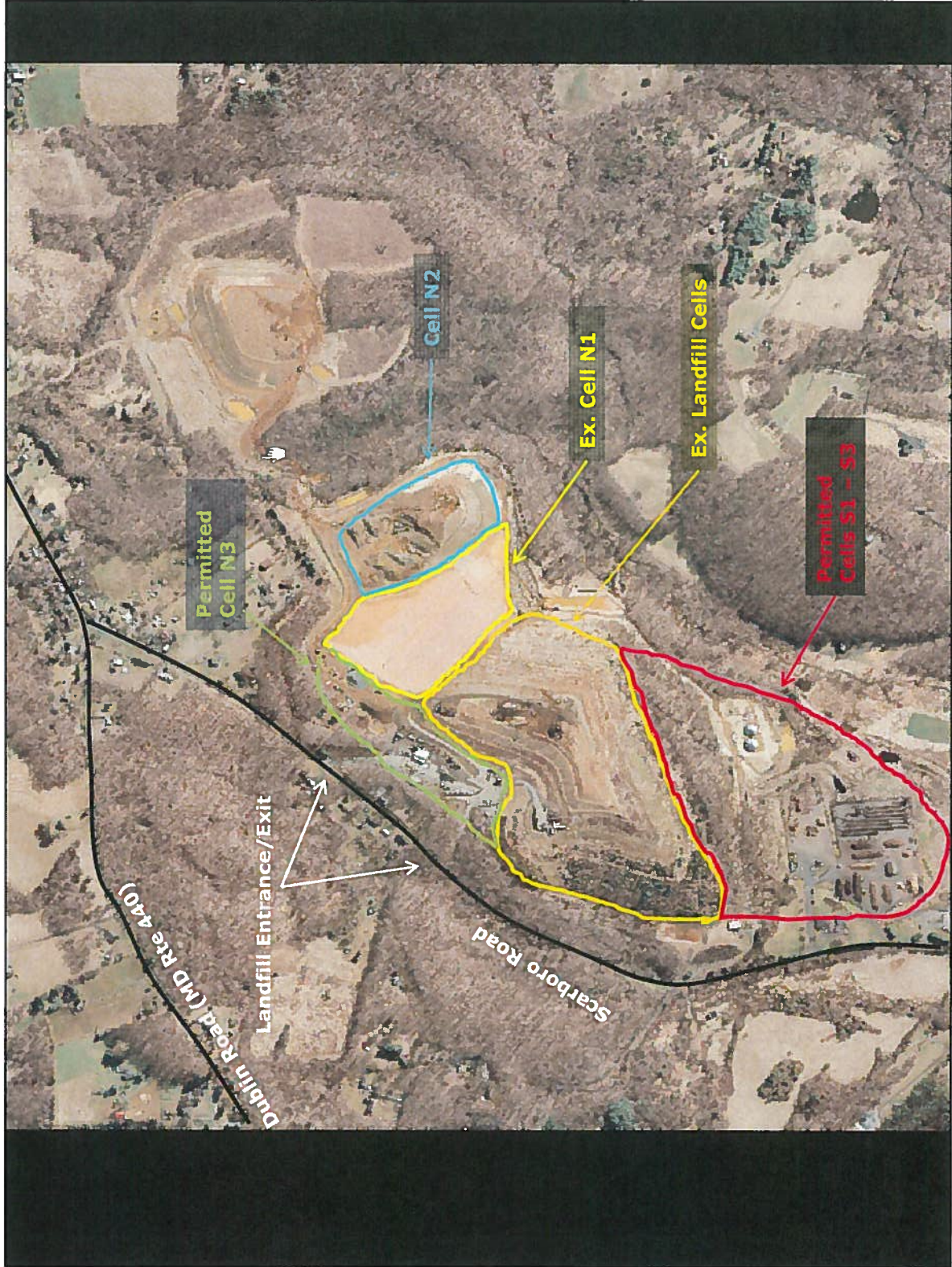
- **360 ton per day facility ( $\approx$ 110,000 tons per year)**
- **Army Steam Supply Agreement expires March 2016.**
- **Army can not extend 30-yr Agreement.**
- **Army does not wish to continue operation.**
- **Army will require facility and steam lines to be removed by 2019.**

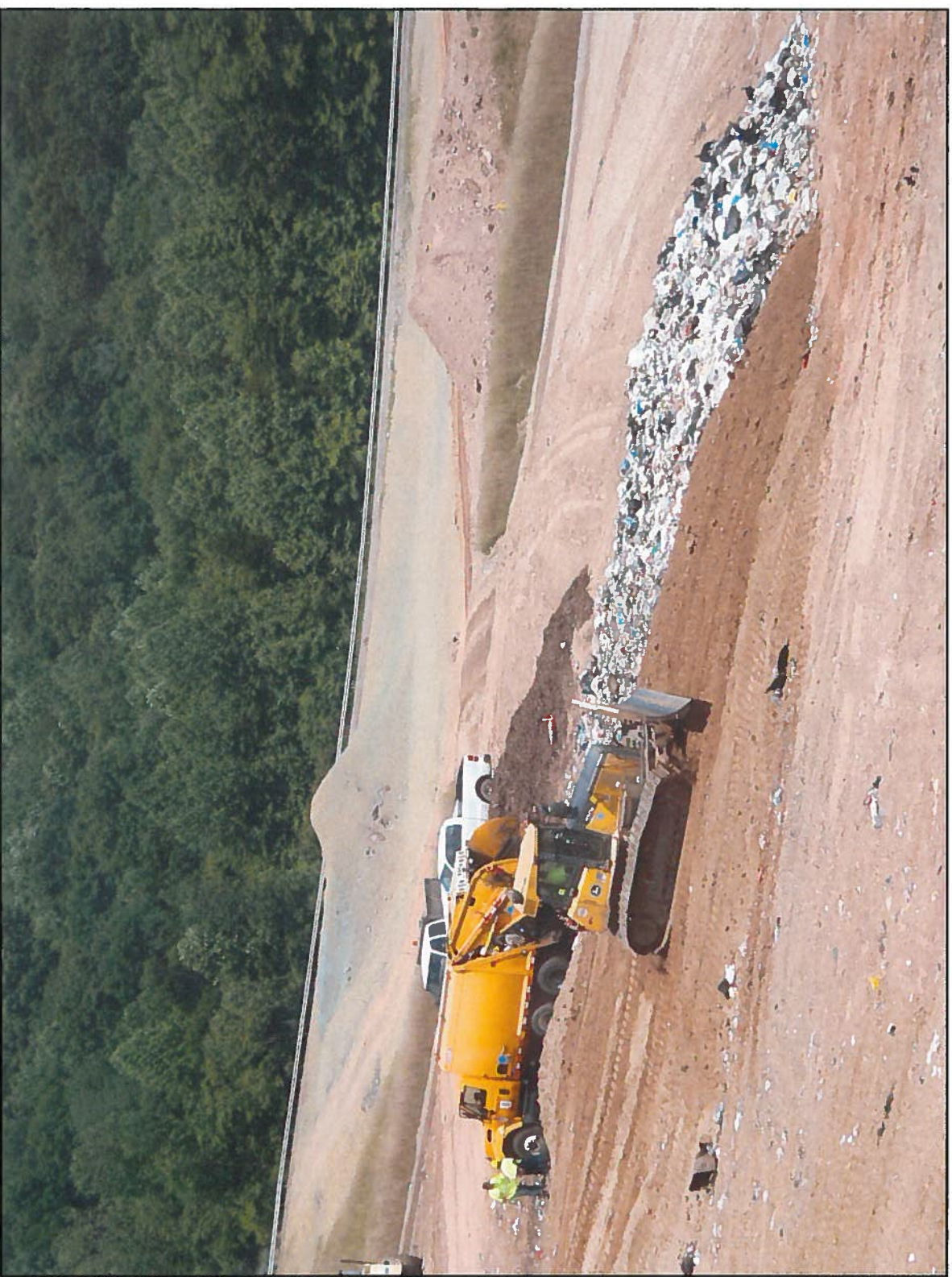
# HARFORD WASTE DISPOSAL CENTER

Scarboro Road, Street

- **Landfill**
- **Homeowner Drop-Off**
- **Mulch and Compost Facility**
- **Recycling Transfer Station**

# HARFORD WASTE DISPOSAL CENTER LANDFILL





## Facts

- **Total capacity will only last until 2025.**
- **Cell N3 and Cells S1-S3 require the relocation of significant facilities and the associated land to relocate them.**
- **Siting new Landfill with 20-yr capacity will, depending on environmental site restrictions, require a 400-500 acre site (includes support facilities and buffers).**
- **Upcoming State regulations will likely phase-out use of in-State landfills.**
- **Landfilling is not a Sustainable Solution.**



# HARFORD WASTE DISPOSAL CENTER MULCH AND COMPOST FACILITY



## Facts

- **Facility accepts leaves & grass which is processed into compost.**
- **Facility accepts brush & limbs which is processed into mulch.**
- **40,000 Tons per Year.**
- **Currently able to turn over inventory annually.**
- **New composting regulations expected to be promulgated later this year by MDE. To be tailored for each of the three types of feed stocks. (ie. leaves and grass, food waste, and biosolids).**



# HARFORD WASTE DISPOSAL CENTER RECYCLING TRANSFER STATION





## Facts

- **Unable to handle truck volume.**
- **No room for truck queuing.**
- **Small and congested site.**
- **Not Consistent w/ Industry Standards – Enclosed Building.**

# TOLLGATE YARD TRIM DROP-OFF FACILITY



## Facts

- **Hours of Operation Limited to Budget constraints.**
- **Over 2000 Vehicles on some Saturdays.**
- **Small and congested site.**
- **Unable to expand much and process mulch and compost due to space restrictions from existing landfill.**

# PROPOSED DISPOSAL PLAN (2016)

## Arrangements

- **Waste-to-Energy (WTE) Agreement with Army terminates on March 17, 2016.**
- **At that time, WTE plant and HWDC landfill will no longer receive waste from commercial haulers.**
- **Solid waste disposal Agreement with Baltimore County approved by County Council and executed in 2013 will commence.**
- **All trash collection trucks will be directed to transport and dispose Harford trash and single stream recyclables to Baltimore County.**

# PROPOSED DISPOSAL PLAN (2016)

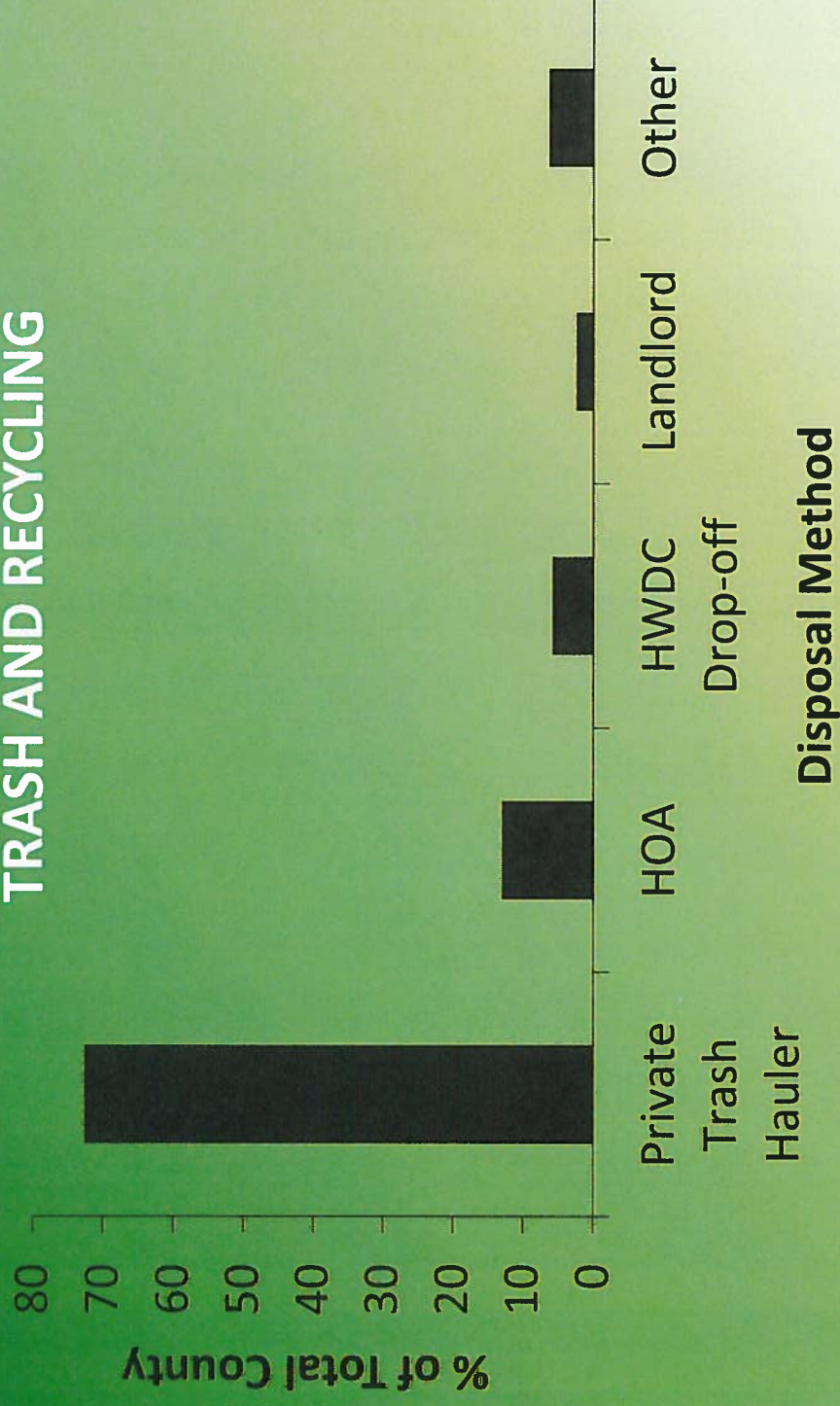
## Arrangements (Continued)

- **HWDC Homeowner drop-off facility will remain open Monday – Saturday.**
- **HWDC Mulch and Compost facility will remain open Monday – Saturday for businesses and residents to drop off yard trim and to pick-up mulch and compost.**
- **Tollgate Yard Trim facility to remain open on Saturdays to residents only.**
- **Baltimore County’s facility will not be open to County residents. Only use by private trash companies and municipalities.**

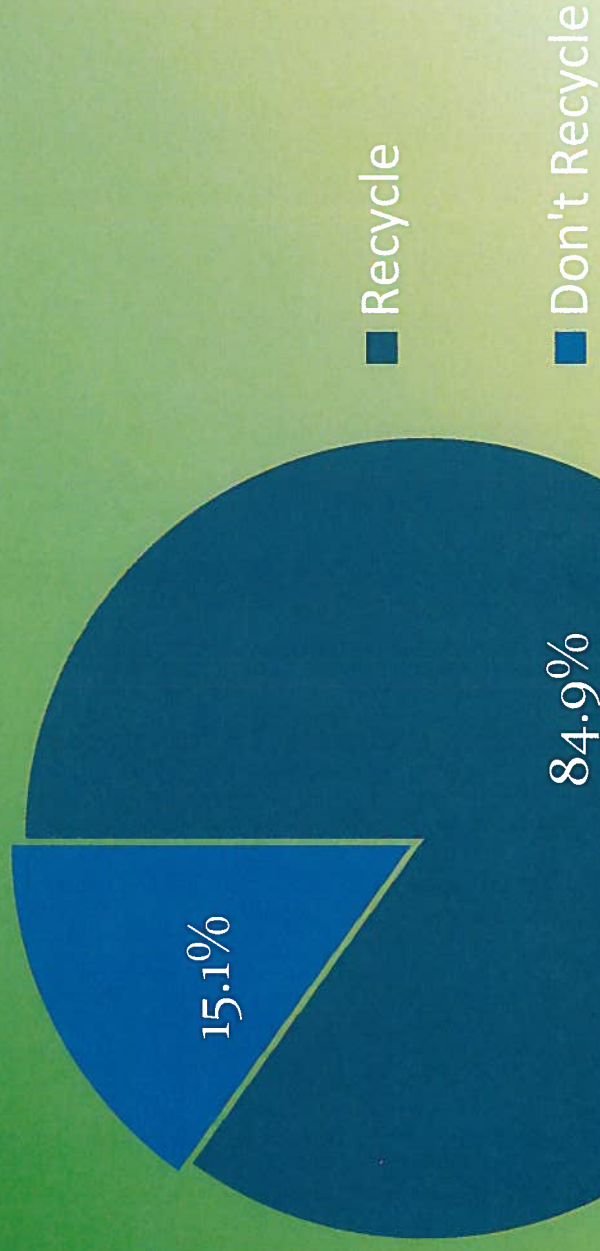
## **SOLID WASTE/RECYCLING PHONE SURVEY**

- **Performed January 2014 by Pinnacle Communications on behalf of Harford County.**
- **748 Respondents.**
- **Respondents chosen by random and broken down by zip code.**
- **The number of respondents chosen for each zip code ensured the survey results were statistically significant and not skewed.**
- **5 minute survey.**

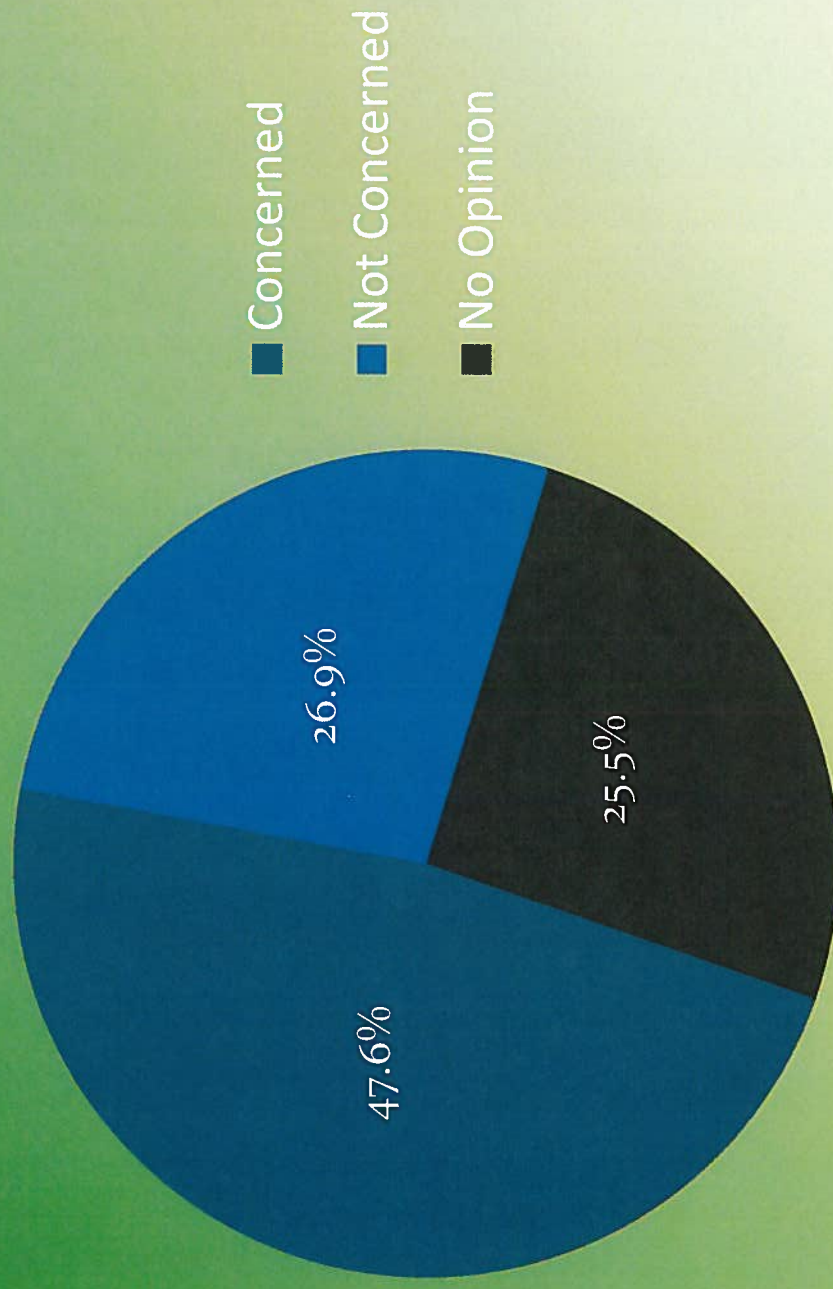
## METHOD BY WHICH RESIDENTS DISPOSE OF TRASH AND RECYCLING

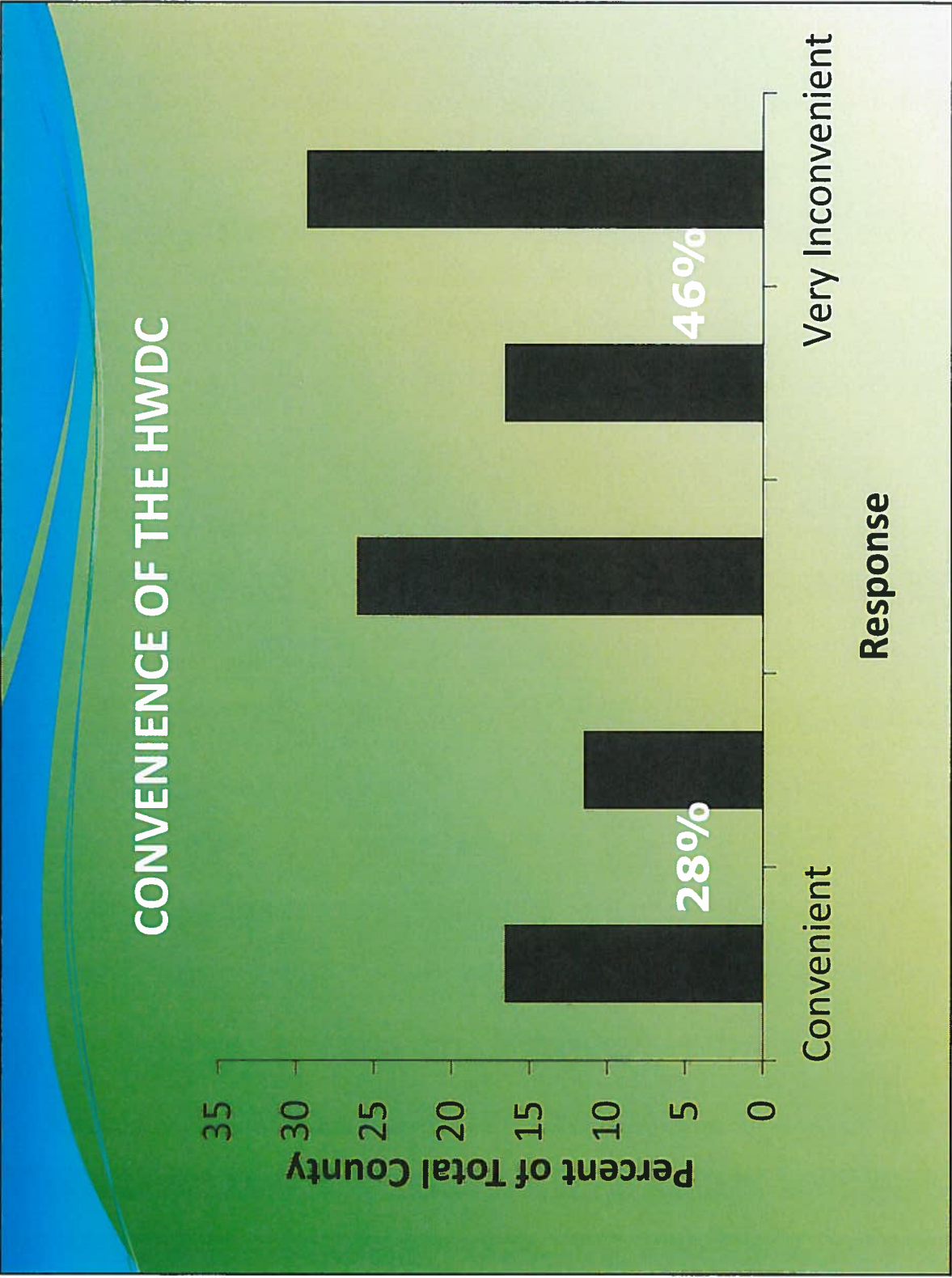


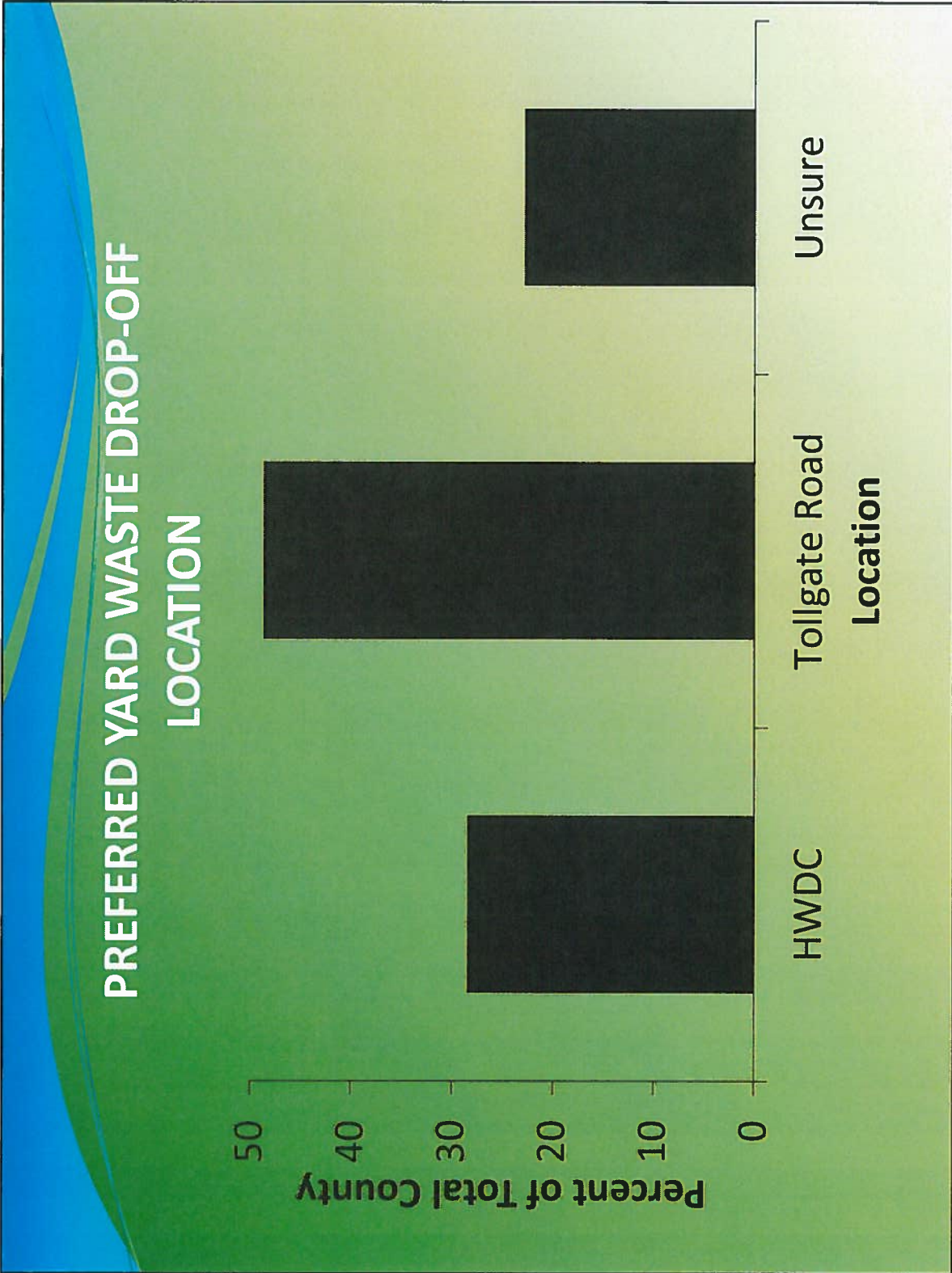
## COUNTY-WIDE RECYCLING PARTICIPATION

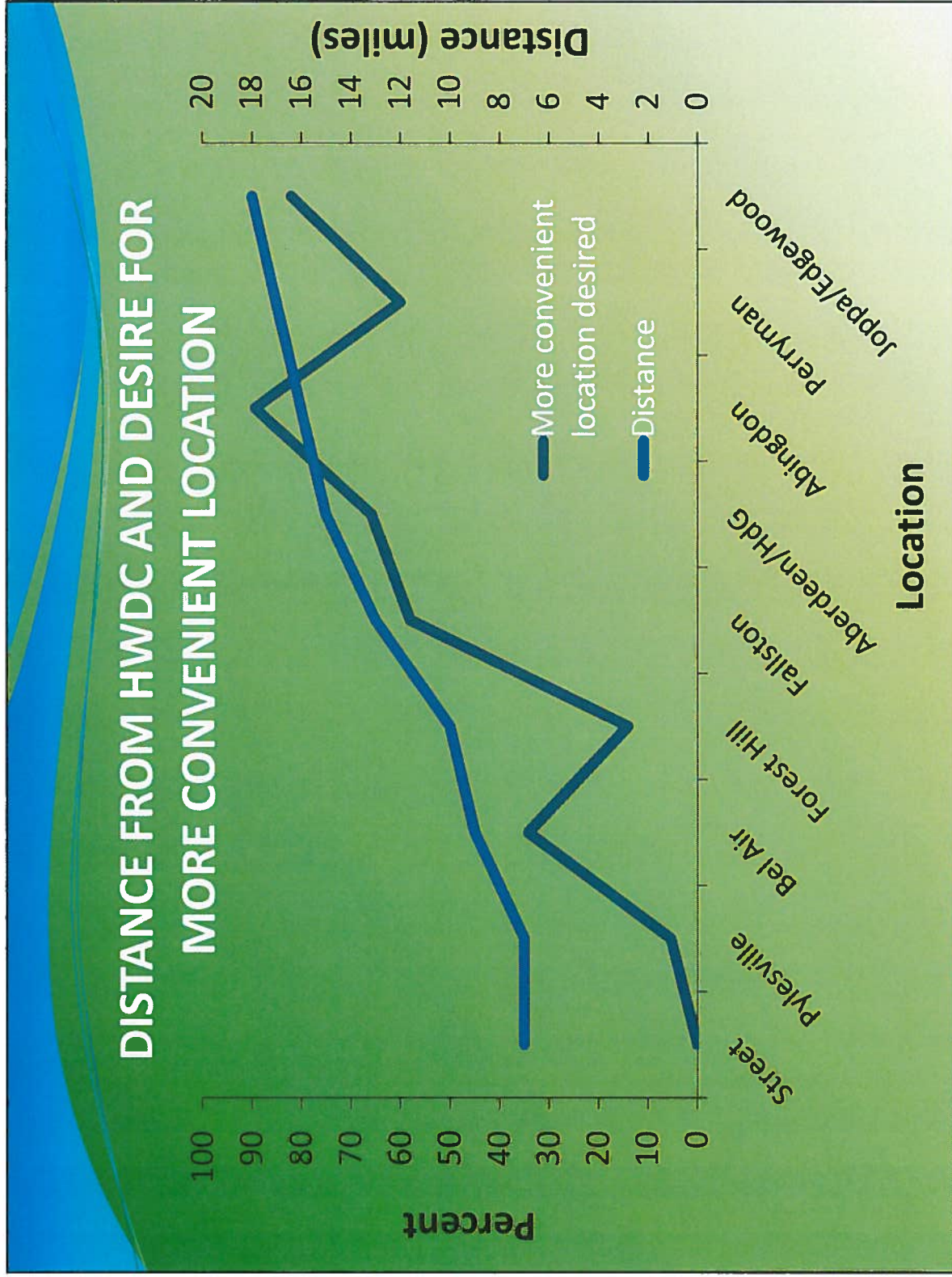


## CONCERN OVER COUNTY'S INABILITY TO CONTROL PRIVATE COLLECTION COSTS









# FUTURE CONSIDERATIONS

## Public Convenience

- **HWDC is not convenient to many.**
- **Should there be another Home-Owner drop-off facility closer to the greater population?**
- **Should there be another mulch and compost facility closer to the greater population?**
- **If so, where should they be?**
- **What metrics should be used that balances both convenience to the public and separation from residential areas?**
- **Good buildable land that meets the zoning criteria is scarce and expensive. Is the convenience of these facilities worth the expense?**

# FUTURE CONSIDERATIONS

## Maryland Department of Environment Zero-Waste Plan

- **Draft Plan presented for public input May 2014.**
- **Zero Waste Goals:**
  - **Divert at least 85% of all waste for disposal by 2040 (through source reduction, recycling, reuse, and composting).**
  - **Overall Recycling Goal of 80% by 2040.**
  - **Recycle at least 90% food scraps by 2040.**
  - **Recycle at least 90% yard waste by 2040.**

# FUTURE CONSIDERATIONS

## A Portion of the MDE Zero-Waste Plan Objectives

- **Divert 100% of all waste from Maryland landfills by 2040.**
- **Mandatory food waste diversion for businesses and institutions by 2020. Require everyone have access to recycling services for food waste by 2030 and encourage food waste composting and anaerobic digestion facilities.**
- **Phase-in disposal bans on recyclables (mandate recycling).**
- **Disposal bans on electronic waste (mandate electronics recycling).**
- **Ban the sale of non-recyclable materials.**
- **Adopt a bottle bill.**
- **Recover energy from waste (anaerobic digestion and WTE only after all recycling efforts are maximized)**

# FUTURE CONSIDERATIONS

## Financial Sustainability

- **Currently the Division of Environmental Services annual operating budget is funded by revenue from solid waste fees (\$12.5M) as well as the General Fund (\$1.7M in FY15). Debt service on the capital budget is funded from General Fund.**
- **Consider converting Division of Environmental Services to either Enterprise Fund or Special Revenue Fund.**
- **All operating and capital expenses would be paid for by all generators of waste and recycling.**
- **Requires no financial support from General Fund.**
- **Requires new solid waste fee structure.**

# FUTURE CONSIDERATIONS

## Efficient and Cost-Effective Trash & Recycling Collection

- **Currently trash and recycling collection is accomplished under free enterprise system.**
- **Residents and businesses are free to choose their own trash collection provider.**
- **Current system has inefficiencies as multiple companies may service the same neighborhood increasing truck traffic and fuel costs.**
- **Contractors have no guarantee in their customer base. Collection fees factor in inherent risks and marketing costs.**
- **If some companies have a market edge in customer base and service area coverage, pricing may become skewed.**

# FUTURE CONSIDERATIONS

## Efficient and Cost-Effective Trash & Recycling Collection

- Explore feasibility to contract residential trash and recycling collection for residents.
- Divide County into districts and companies would bid on one or more districts for a multi-year period.
- Establish uniform rates for residential trash and recycling collection County-wide.
- Due to a more efficient system, fees may be less than many residents currently pay.
- County would control performance of the companies through contracts.
- Would there be interest if trash collection costs (2013 dollars) would be around \$75/quarter for everyone?

## **WE WANT TO HEAR FROM YOU**

**Presentation, complete phone survey and the Draft MDE Zero-Waste Plan can be viewed at County website July 16, 2014 at [www.harfordcountymd.gov](http://www.harfordcountymd.gov).**

**County residents and businesses may submit comments and suggestions up until August 15, 2014 at [env@harfordcountymd.gov](mailto:env@harfordcountymd.gov).**

# APPENDIX 16

**Harford County Solid Waste Management Plan  
July 15, 2014 Community Input Meeting  
Categorization and summary of comments and response to the information presented**

**I. General Comments**

Commenter No. 1

- a. Maryland Department of the Environment Draft Plan, Zero Waste Maryland, April 2014.

Without question, it is both essential and long overdue to aggressively address the State's as well as the Nation's solid waste disposal concerns. Even knowing better, our treatment of the environment has resulted in many negative consequences over the last several decades. It will take a dedicated effort to make the changes necessary to repair the damage. I feel MDE is being proactive in putting out guidance and establishing the milestones to meet the State's environmental goals. The MDE draft plan, however, does allow some leeway regarding that implementation and the Harford County administration must be sensitive to its interpretation of the goals and work both in harmony and in collaboration with both public and private sectors in order to achieve them.

- b. Pinnacle Report, Harford County Solid Waste and Recycling Opinion Survey Data Report, January 2014.

As far as the 5-minute telephone survey is concerned, I believe there were considerably far more cost effective and equally efficient methods to gain the information derived. Personally, I did not see any public notice that a survey was going to be conducted by this method or why it would be important for the citizens to participate. Most folks (myself included) do not respond to telephone calls from phone numbers or companies they are not familiar with. There was certainly time to have distributed notices and surveys to the several community councils and civic groups, senior centers, libraries, etc. The County administration told Pinnacle what questions to ask, where to call, and how many samples to take in each zip code region. The resultant small sample size of 748 may or may not necessarily accurately represent the eligible 90,000-odd households, and it seems, small businesses who were left out of the survey.

*Response: A phone survey was the only method available that would provide an unbiased and statistically significant response to the questions asked with representation across all geographic regions of the County. An on-line survey would have opened up unlimited responses from the same household/IP address and therefore biasing the results. There was no notification provided and the survey calls were made at random on purpose. Prior notification could have given some responders with time to solicit others with similar opinions which may or may not have skewed the results. The purpose of the survey was for gathering information from residents on such topics as convenience of facilities, residential trash collection, fees for homeowner drop-off facilities, etc.*

In looking at the 10% (+/-) of the "nonparticipating" respondents who used "other means," to dispose of their solid waste, why were they not asked exactly how they disposed of their solid waste and recyclables? As it is, I felt some of the responses to the January telephone survey sounded really lame ('Too complicated to recycle' and 'Don't know how often my trash is picked up') Seriously? Even so, I

just don't believe those low numbers support a trash transfer station in the southern portion of the County which is what I believe the County is trying to establish. The survey results did not support such action. How would one determine if those citizens representing the lower numbers or giving nonsensical responses would actually use such a facility if they are not now? Evidently, there is no more of a problem in the southern portion than other areas in Harford. I do not believe the survey proved anything but the need for a more concerted effort to educate the public about the need for recycling and how easy it is to do. We also need to encourage civic responsibility at a much younger age to reduce environmental pollution.

*Response: The survey question was limited to 5 minutes. That is typically the amount of lapsed time before a surveyor will lose the attention of a respondent. A private communications company utilized their staff which read from a script to ask the survey questions. This staff was not qualified to ask additional questions that were specific to Harford County programs. Therefore, follow-up questions were not a part of the survey. County staff was not involved since the County does not have the resources necessary for the time to perform this survey. The survey phone calls were made in the evening hours in order to increase the probability of a resident answering the phone. A limit had to be placed on the options for answering the survey questions and all options had to be uniform for all respondents.*

c. Harford County Public Works Department Presentation, Harford County Solid Waste Management Plan Public Input Meeting, July 15, 2014.

There is no reason for the County administration to either control or to contract out our solid waste hauling. I understand haulers have been directed by our County to take a certain amount of our solid waste to Baltimore County instead of the APG WTE for many years, so they know the way. The system must be working so why mess with it? The attempt to cut competition which keeps the costs down to the end users is wrong. I should think small commercial haulers made quite an investment to get their businesses started, so why put them out of business and their employees out of work? I do not believe the State, much less the County, can legally dictate/restrict who may haul solid waste and to what facility as long as it is done safely and in accordance with transportation regulations. Did the County discuss this with **ALL** of the commercial haulers for their opinion? If so, what was the result?

*Response: Acknowledge comment. The County did offer meetings with the residential trash collectors and met with many of them. We received an equal amount of both favorable and unfavorable reactions.*

I do not understand the desire by the administration to take over solid waste management. It is as though someone wants to establish an authority for solid waste. A lucrative future position perhaps? The general consensus is, if the County administration takes over the trash hauling business, our rates will be significantly higher. We have an excess of high-paid administrators in the County and there is no need to establish yet another layer of management to exercise control over this process.

*Response: Reasons why the County is requesting input from residents on the contracting of trash collection was given in the July 15<sup>th</sup> presentation, one of which includes a reduction in trash collection costs as evidenced by other governmental agencies across the State which have implemented such programs. Most other Counties in Maryland already have such programs in place.*

Although there does appear to be a disparity in trash hauling costs to the citizens, it is up to the citizens to check for the best service at competitive pricing. If a citizen is unhappy with their current hauler, it is their option to search for one of the many other haulers available. There is no need for the administration's involvement.

*Response: There is only one trash collector in the County that offers service to all geographic regions of the County. This trash collector has about 90% of the market share. The other trash collectors do not offer their services to all areas of the County. Therefore, not all residents have the option of choosing another provider and are stuck with the fees that the one provider charges.*

As to the tentative \$75 a quarter the County administration might charge me, that would still be a higher cost than my commercial hauler charges. It is still less expensive for me to use my current commercial hauler than for me to make the same trips to the County facilities in my own vehicle. As I have stated previously, I have gone to the HCWD facility occasionally and I enjoy the trip. I have the option of taking solid waste/recyclable materials, but generally I am after the mulch. Again, my choice.

If the County administration really wants to stay involved on a more limited basis, I would suggest:

- Incentives to encourage more recycling by citizens and businesses to attain lower commercial carrier rates or higher fees for nonparticipants. I do believe that those who do not recycle should be paying more for their trash disposal than those who will recycle. Their lack of participation drives up the costs for all of us. People are more impacted by their pocketbooks so if the nonrecycling participants believe that their costs will rise, they may rethink their options.

*Response: Under a free enterprise system, the County has no control of the private contract between the trash hauler and the customer and therefore legislating cost incentives become legally problematic with the current system. A trash collection contracting program lends itself to establish uniform pay as you throw programs.*

- Locating more recycling resources. Almost everything can be and is recycled elsewhere in this Country, especially lumber and wood products, foam products, all types of paints, carpeting, etc.

*Response: There are considerably a large amount of consumer products which are extremely difficult or impossible to recycle. (1). Treated lumber, painted/stained/finished wood all pose problems with end uses if ground up as mulch; (2) an enormous amount of the waste stream includes furniture. The time and resources are just not available to de-construct every type of material that make up a piece of furniture, (3) plastic film – technology has not yet been developed to differentiate the multitude types of plastics used in the plastic film industry and plastic film is prone to contamination by dirt, food, etc. which do not lend it from being re-used. There is a cost associated with recycling anything. The County will consider recycling additional materials whenever it proves to be economically feasible.*

- The State and/or Counties request that manufacturers try to use more recyclable or biodegradable packaging or just less packaging in general.

*Response: Extended Producer Responsibility (EPR) programs should be initiated at the Federal or State level due to the globalization of manufacturing. Many Countries in Europe have initiated such programs.*

- We keep a free enterprise system where haulers can advertise and compete for its customer base.

- Harford County keep the mulch/compost facility in Scarboro, and continue to use the Tollgate Facility as a yard waste/trim drop site for citizens.

- **IF** the County administration insists on a type of SW transfer station, then expand the existing centrally-located Tollgate facility in Bel Air. The Baltimore County site is approximately 2.2 miles from Harford County's southern district. As is stands, the very idea of the County taxpayers sponsoring two such facilities is unjustifiable and cost prohibitive.

*Response: As discussed in the presentation, the Tollgate facility has no room for expansion and can not handle the volume of traffic currently. There are no plans for the County to build a SW transfer station in the County. The Baltimore County facility will not be available to Harford County residents. It will only receive solid waste and recycling from the licensed trash collectors.*

- The County administration could establish a salvage yard both at Scaroboro and at Tollgate for citizens so they can repurpose old furniture, pianos, bikes, sinks, cabinetry, building materials, etc. Going to the 'dump' and finding a treasure is actually fun and many, many perfectly usable items are unceremoniously trashed. Items left too long in the inventory could eventually be taken to the Baltimore County site for disposition. Baltimore has several commercial salvage areas.

*Response: There is no such land available at Tollgate. The cost to construct a building to house such items in a dry and secure environment and to man such a facility is cost prohibitive. Such programs also cause County liability concerns with the offering of used items with unknown conditions. Additionally, State laws prohibit scavenging at public facilities.*

- The County could retain the household hazardous waste collections twice a year, preferably at the Tollgate Facility or at Scarboro. They can then be hauled to Baltimore County to a proper disposal facility. Dead animal waste could be buried by DPW personnel on/off site or taken to the local cremation facility as is currently done. Any residual ash could be scattered in a public woodland area or, more preferably, be taken to a concrete or roadbed processing plant for integration into concrete block or highway construction materials.

*Response: The County has historically held a household hazardous waste event biannually at a cost of \$20,000. Due to budget restrictions this event will be held only once in FY15. Baltimore County has no interest or room at their facility to receive any Harford County residential customers. The County already buries dead animals at the HWDC landfill.*

- Everything else should be handled by the commercial haulers who are aware of proper disposal procedures and who can also help search out more recycling sources which will put more money in their own pockets.

It's a given that the WTE would have been the best option to rid the County of its solid waste **and** make money doing so, but some of our politicians felt it necessary to demonstrate their pettiness to the Department of the Army with predictable results. It was not the U.S. Army's doing that we lost that option. Also, there was another option for citizens to get rid of their solid waste/recyclables quickly and easily by rail with no costs other than for the use of the commercial haulers and it would appear the County's powers that be carefully blew that one too. I gather Baltimore County has captured the prize that will ultimately send our solid waste southbound by CSX.

*Response: This statement is incorrect. Amendments to the 2005-2015 Solid Waste Management Plan clearly stated the reasons why the WTE plant was no longer considered a viable option for long-term waste disposal. The 2015-2024 Plan will include the history of how the decisions were made to develop the plan with Baltimore County.*

#### Commenter No. 2

I am satisfied with the admission that landfills are unsustainable and agree with the plan to ship all county trash to Baltimore for incineration. However, it is still in the plan for the two expansion cells at Scarboro, one which was already built and I feel we can't stop. The other planned cell is along Sandy Hook Rd. within feet of Deer Creek. This cell expansion should be removed from any future solid waste plans. *Note: This commenter had several comments concerning the existing landfill cells.*

*Response: We acknowledge these comments. During the presentation, it was made clear that the upcoming Solid Waste Management Plan will not include any plans to build additional permitted landfill cells during the next 10-year planning period due to the agreement with Baltimore County and the philosophy that landfilling is not a sustainable solution to solid waste disposal. It should be noted that the HWDC southern expansion area is not within feet of Deer Creek. An amendment to the Zoning Code in 2009 created a 1000 foot buffer from Deer Creek. The Solid Waste Management Plan is a planning document and as such does not include information concerning the day to day operations with existing disposal facilities. Such criteria on operations are a part of the Refuse Disposal Permit issued by MDE.*

#### Commenter No. 3

The Waste to Energy site seems to be a solution for using waste to generate steam at APG. I believe we messed up by not negotiating to keep this facility AND it will cost Harford County to remove the piping.

I understand there may not be the amount of land needed for an expanded facility and there may be regulations that will do away with landfill operations in MD. Taking this under consideration, do we have any leverage or ownership in the facility we plan to build in Baltimore County? Could Baltimore County decide not to allow our trash haulers to use this facility?

*Response: The agreement between Harford County and Baltimore County is a legal binding document.*

I am glad to see we are in good shape with recycling and wish everyone would recycle. I am hopeful we can continue to have a composting program. This program could involve families so they could see the benefit to composting and recycling.

I am aware that there are several contractors that service my area. However, trash removal is not paid by my taxes. I am not in favor of dividing the area up in order for haulers to bid. This is government control and I would not have any recourse if my trash hauler did not do the job. This is a free enterprise and until the fees are paid by the county, the county should not control it.

#### Commenter No. 4

It was brought to our attention that a phone survey was conducted in Jan. 2014 regarding the solid waste plan. We were not contacted, and have an opinion on 2 of the questions asked.

"Section III – Yard Trim Disposal

4. If the County would offer a yard waste drop-off facility in the southern portion of the County, along the Route 40 or I-95 corridor, would that be more convenient to you?"

"Section IV – Disposal Facilities

2. If the County would open up a second resident drop-off facility for trash and recyclables in the southern portion of the County along the Route 40 or I-95 corridor would that be more convenient to you than the Landfill?"

We are **very strongly opposed** to any thought of the County considering the former Plecker site as a possible drop off area. With Harford County's agreement with Baltimore County on waste disposal, we hope this will end any ideas about the Plecker site

*Response: The Baltimore County agreement does not affect homeowner drop-off facilities. As stated in the presentation, Eastern landfill will not be available to County residents.*

#### Commenter No. 5

After reviewing the current waste plan several obvious concerns occur to me.

- Closing the landfill before it is at full capacity is costly and will exacerbate waste disposal issues.

*Response: As presented to the County Council during the presentation of Bill No. 13-23 for approval of the agreement with Baltimore County, several long-term solid waste disposal alternatives were evaluated. Landfilling was not considered a viable long-term solution. The capital and operating expenses to only operate the facility until 2025, when it is projected all capacity would be exhausted, is cost prohibitive. Additionally it is expected the State will soon phase-in significant fines for landfilling solid waste as they implement their zero-waste plan.*

- Landfill "life-expectancy" projections are based on current waste model which does not include zero waste policies. Therefore if those policies are implemented the overall "life-expectancy" will be extended.

*Response: See comment above.*

- Zero waste policies should be implemented immediately. Businesses currently create massive waste which is unnecessary. Food waste is easily recycled, composted or reused by farmers as feed for various animals including pigs. Exploring partnerships with existing farms to utilize food waste and compost would not only reduce overall waste but increase profitability.
- Quarterly rates for trash collection do not encourage recycling or zero waste policy compliance. Residents and business should be charged by the amount of waste produced. Due to recycling and composting, my household produces less than one 35 gal. trash can per month. Since Aberdeen has a trash sticker program this means that I am charged only for what I produce which is about \$12/year.
- Multiple businesses in Harford County already accept and pay for metal and electronic waste. Harford County should establish relationships with those businesses.

*Response: Harford County already accepts scrap metal from residents and receives revenue for that material which is disposed of by a local scrap metal dealer under a County contract.*

- Since Harford County is paying for waste transported to Baltimore County, Harford County should only transport minimum amounts required in contract.
- Any new waste disposal facilities or transfer stations should only be established in current industrial zones.

*Response: The cost to transport waste to Baltimore County will be borne by the licensed trash collectors. Once the material is disposed at Baltimore County it will be transferred to tractor trailers where it will be shipped to a private disposal facility. Harford County will be charged a disposal fee based on the amount*

*of material delivered. The Zoning code stipulates what zoning categories allow placement of different types of solid waste disposal facilities.*

Commenter No. 6

Overall, a plan that needs to be addressed and be well written.

It should not be looked at as a "cash cow" for Public Works; should be a zero-balance based on demonstrated and proven needs.

The two largest problems that my family & I see in the proposed plan would be:

1. A "Bottle Bill". Had this as a boy (50 years ago); it was a disaster then and would continue to be a disaster today. Required stores to charge a deposit (which went to government) and forced families to cart their bottles back to stores in order to get their deposits back. Requires too much infrastructure with vendors along with broken bottles which will neither be recycled nor redeemed. New York keeps attempting to revitalize their bill and the residents and stores hate the process. Next step would be to add a can bill to address the items that are seen most often on the side of the road. Then it would be cups, bags and assorted trash from the fast food vendors. Another cash cow for the county. **No to this idea.**
2. County involvement in the selection of trash haulers for the public. The public does not want Harford County to become involved with the selection of which PRIVATE vendor that an individual household will use. This removes my rights as a consumer and is a direct attack on free enterprise. The only thing the county should become involved in is quality control and, if deemed appropriate by the public, price stabilization. Currently, I shop for a trash hauler based on my standards, not those imposed upon me. If I am not happy with a vendor, I will attempt to resolve the issue directly with them; if that does not work, I then make the decision to change vendors. If the county could become involved as an arbiter with a waste vendor during a customer dispute, that would be welcomed. If the trash haulers don't mind riding all over the county to serve their customers, then what business is of the county to become involved. **No to this idea.**

Commenter No. 7.

Just few comments on your plan

- How about making provision for recycling plastic bags?
- How about old batteries?
- Could you make arrangements for yard waste pickup?
- Did you investigate any plans to combine waste water with paper waste? I remember someone proposed such approach at U. of PA. The idea is the material breaks down and the can be used as a fertilizer.

*Response: All local grocery stores already offer plastic bag recycling. The HWDC accepts batteries. Currently under the free enterprise system it is between the resident and trash hauler to agree on yard waste collection and at what cost. Yard waste collection can be a part of a contract collection program. Composting sewage sludge can be very odorous and finding a suitable location in the County that would not affect neighbors would be a problem. Additionally, new State regulations concerning the design and construction of such facilities are extremely onerous and result in significant construction and operational costs.*

Commenter No. 8

Recycled materials should be picked up for free or almost free. Charge for trash on a per-volume basis, with trash paying most of the costs of recycling (assuming reclamation of recyclables doesn't pay the cost of collecting them).

*Response: Under a free enterprise system the County has no control of the costs charged between the trash hauler and their customers. Under a trash collection contracting program a universal pay as you throw system could be implemented. Harford County does not charge residential or commercial customers for disposal of recyclables.*

Proper separation of recyclable materials makes them a more valuable resource. Reconsider "single stream recycling", which mixes incompatible materials that can prevent recycling. Example: When glass and paper are recycled together, the glass often breaks; broken glass ruins the drums used to process old paper into new paper, and the contaminated mix itself becomes unusable trash.

*Response: While a dual stream program adds some value to some of the commodities such as paper since broken pieces of glass typically will not contaminate the paper, it is much less convenient to residents. Since Harford County implemented the single stream recycling program, recycling quantities have increased over 40%. While a single stream program results in some reduced revenues due to the quality of some of the commodities, the benefits of increased participation due to its convenience outweigh these costs.*

When apartments or a HOA have centralized trash depositories, they should be required to also provide recycling bins for each material.

*Response: Maryland law requires all owners of apartments and condominiums with 10 or more units to begin offering recycling to their tenants by October 2014.*

Approach the municipalities about combining their trash and recycling efforts with Harford's, as savings may be possible for both.

*Response: All trash and recyclables generated by the municipalities are disposed in Harford County facilities. The County Code requires all solid waste generated in the County to be disposed of within County facilities.*

Recognize that areas inside the Development Envelope probably throw most of their food waste down the disposal, while areas outside it can do on-site composting. I compost all my vegetable matter (including bread) in a recycling bin I bought years ago from a county-sponsored sale. It's amazing - convenient, can't smell it more than a foot away, and it disappears into compost for my garden. Since it's aerobic it doesn't appear to create methane (although I'd like to know for sure). I keep a tiny, lidded bucket in the kitchen and dump it in the bin outside when it gets full.

*Response: Although the Division of Environmental Services promotes backyard composting, many residents in the urban areas of the County live within HOA covenants. Some of which may not allow composting or backyard gardening. Additionally, if allowed, some urban residents may complain that food waste may attract vermin to their neighborhood.*

Determine if it makes sense to crush/shred construction waste for reuse elsewhere. Example: crushed concrete used in roadbeds, metals and glass recycle, insulation and wallboard might be recyclable. Might provide jobs if people are hired to do this on the job site (i.e. separate it at the construction site, not after it's mixed). Again, charge for trash and not for separated recyclables.

*Response: We welcome a private company establishing their business in Harford County which would accept construction and demolition material and for recycling. Currently the only available facilities for such material are private landfills in Baltimore County.*

Electronics contain valuable materials, and they can be designed to be recyclable. Encourage proper design by requiring retailers to "if you sell it, you must take it back". There are several ways in which this is already being done.

Require a deposit for glass, metal and plastic beverage containers.  
Other states have been doing this for years. Has the side benefit of cleaning up our roadsides too.  
Same for plastic shopping bags.

*Response: We believe a bottle bill will undermine an extremely successful single stream recycling program. A 5 or 10 cent deposit on a beverage container provides little incentive for residents to go out of their way to a redemption center, especially due to the high cost of fuel. Additionally, redemption centers would likely have to be operated by Counties. The pro forma provided by legislators proposing such bottle bills in recent years have shown inadequate revenue to support such redemption centers.*

Encourage free market competition between private trash haulers, but with oversight by county government. (1) Make the service areas on which haulers will bid small enough and contiguous enough to support small haulers. (2) To insure quality service, establish "complaint lines" for customers to report problems. Too many complaints should be grounds for excluding the hauler in that area from competing there in the next round of bids.

*Response: These programs would only be permissible under a trash collection contracting program.*

#### Commenter No. 9

First, I would like to express my thanks to the employees who manage the existing facilities and litter control.

Second, I want to thank the presenters for having a meeting on the MDE Zero Waste Draft Plan.

P 26/27 Put in parentheses the actual Tons for each bullet so you don't need to convert Jobs to Tons.

P 27 Put the actual words for the acronyms, GRC and MMtCO<sub>2</sub>e

P 32,1.7 Why wait until 2015? It can be done now.

P 34,2.2 Lower limit of ten is too high. Change 10 to 2 and see what the response is for limit on units.

P34,2.3 Require this instead of encourage. You will need the most accurate data in the first trial year. The success of the program rides on having accurate data. Then continue with mandatory reporting. With updated accurate data you can adjust as necessary.

P35,2.4 Change Maryland "should" to Maryland "shall". If you leave it as should it is a commitment to nothing. This can be done now. Require that promotional material used to advertise contains a statement that recycling is provided for the following: list each type. Cans, bottles, etc. I have been to an event and thrown containers into the trash only to discover a recycling container was available.

P35-36, 2.6 Encourage PAYT. This was done by Eastern Trash when curbside recycling started in Harford County. So everything old is new again.

P36,2.9 What is Harford County's position on implementation? This is too long to implement since the plan has this for 2026-2030. Since other counties are able to do this, Harford County should not take this long.

P37, Objective 3 This is difficult to do unless you have many more pick-ups or many drop off sites for food scraps. Entrepreneurs will need to take this and find ways to succeed. I compost now and have been for many years. I purchased the container at a Harford County event. The only trouble with the container is that the plastic slats on the lower sides are chewed and destroyed by animals. A better container system is needed to rotate the compost so it can be ready quicker. I mentioned at a hearing that people who compost should get a tax break on their property taxes.

Page 40 and page 43, 4.6 The County has scheduled pick-ups and Home Depot takes compact fluorescent bulbs. Encourage more store involvement.

P41, 4.2 The ban on electronics should be implemented for 2016 is too vague, since it uses the word "should". Again the word should means basically nothing as far as a tangible commitment. Major retailers are doing this now for many electronics, even cables. for example, Best Buy. How do you account for the recycling done by retail stores? Tube TVs and other tube devices are not covered. Collectors may be interested in the tubes for radios. Clubs who collect and repair old tube devices should have some suggestions.

P42, 4.4 I have used recyclable bags for years with no problems. Even have insulated recyclable bags for cold purchases. You get a 5 cent credit for bag use at some stores.

P44,4.7 Radioactive material is not completely banned. What about ionization smoke detectors? They contain radioactive material, americium-241. They are on a general license from the Nuclear Regulatory Commission. This means they don't control their use and disposal. This must change. It will take considerable pressure from our State senators and representatives to change this. I sent a message to a maker of these detectors, Kidde, and asked if they take the detectors back or if any entity in the US does? They said no one takes them. Also any other generally licensed material falls under the same loophole. With the new standard for smoke detectors to have lithium batteries, many smoke detectors will be thrown into the trash thereby contributing to a lot of this isotope into landfills. THIS IS THE

ELEPHANT IN THE ROOM. With the new requirement for lithium battery detectors, the problem has been elevated in scope. Radium watches and dials, Boy Scout compasses, and clocks fall into this, but these numbers should be small, You could contact the Health Physics Society to see if they have addressed this elevated Am-241 problem. I think it is time that the manufacturer should be forced to recycle these and change manufacturing as necessary to accomplish this.

P44, 4.8 Non-compostable food service is stated. Does this include plastic utensils? I have never seen a recycling stream for plastic utensils.

P47 Waste to energy is good only when the proper recyclables are incinerated. Plastics can create hazardous gases.

P52,7.7 There was a section of the news that showed prisoners growing their own food inside the prison fence. Inmates were proud of their success and hard work.

P53,8.2 Use local newspapers and magazines to educate on this plan. I had not seen that this plan was being drafted until I saw the presentation on 16 July in the local newspaper.

84, 5.4 This section should be linked to the previous section on page 39, section 3.4.

*Response: Comments acknowledged. The Draft MDE zero waste plan was produced by the State and not the County. The comment period expired in May 2014. However, by inclusion in this plan these comments will be forwarded to MDE.*

General Remarks follow:

Presently some churches and businesses have recycling of newspaper to make some money. Is this taken into account?

*Response: We always encourage recycling, no matter the extent. As you know our single stream recyclables are disposed at Baltimore County. There is no cost to Harford County for the transportation of our material to Baltimore County. Previously when we had a dual stream program prior to 2010, we spent over \$400,000 in transportation costs to haul the material to a recycler. While we are not charged by Baltimore County for the transportation, we also do not receive any revenue for any commodities which are sold to secondary markets.*

Some businesses recycle unique items. For example, T Rowe Price recycles ink pens from employees. Optimize use of businesses and entrepreneurs to come up with ways to solve some of these recycling problems. It is better that grants and subsidies where the County is funding businesses. Note: you see signs and advertisements for someone who picks up metal from your location and takes it for recycling. Unfortunately they will take the most economical parts and leave the government with the remainder. This is a difficult balance.

Bottle recycling was popular in the 1950s and early 1960s for bottles of milk, small and large soda . There were no bottles littered on the ground, because they would be taken to a store and redeemed

for cash, 2 cents for small soda bottles and 5 cents for large soda bottles. Now the equivalent is printer cartridges. You never see them thrown out as litter since they have a value at the store. So the stores/businesses should be responsible for redemption of the bottles and not the County for bottle recycling of specific types to be determined.

Mandatory single stream recycling is needed, if you really want this to work and meet goals. We are super recyclers now and our family of three produces little trash, about 7 to 10 gallons on average each week. Most goes into the recycling container and brush and leaves are taken to Tollgate or Scarboro. Unfortunately neighbors put out many trash cans that are overflowing without any recycling. We also compost kitchen scraps. I don't think that it is fair for me to pay for their wastefulness. This should be a fee, that is you pay for your quantity. The quantity should have a cap on the number of cans allowed for trash. It should be realistic and anyone needing additional, above the limit, should be required to get a waiver with an written justification.

I also take apart small appliances, kitchen, vacuum cleaner and others, into their recyclable components such as motors, metal and plastic. Manufacturers should make these appliances easy to take apart. This will allow more people or companies to take on these for recycling.

Include a site at Scarboro for rocks and stones. When tilling, planting, and re-grading; you uncover rocks and stones and they should not end up in the landfill. Hopefully, some businesses may want this material for construction purposes and will then take or pay for this material.

*Response: Unfortunately rocks have little value in the construction marketplace unless mined from a quarry with known and consistent geotechnical properties of the material that meets certain construction standards. Typically rubble landfills are designed and intended to receive earth clearing debris and construction debris. The HWDC landfill will accept soil and sod, as long as it can be used for the landfill daily cover.*

Will residents still be allowed to compost on their property when this plan is implemented?

*Response: This Plan will not restrict property uses on private residential property. However, it is advised anyone check with their Homeowners Association if they live in a community with that structure.*

Age appropriate educational material should be provided at schools to educate the children on these waste issues.

*Response: As part of the recycling public outreach program provided by the Division of Environmental Services, a presentation on recycling is made to the entire fourth grade curriculum in all County public schools.*

What about accounting for waste cooking oil from businesses and homeowners? Is this accounted in the draft plan?

*Response: The Division of Environmental Services is working with some organizations in the possibility of providing the disposal of cooking oil at no charge for re-use as a fuel source.*

Include demolition material in the plan for Harford County. Dumpsters are a concern. They are a catch all for clean-up and disposal. Recyclables and all types of debris are mixed in dumpsters.

*Response: The Plan addresses C&D disposal facilities and recycling.*

Account for hazardous waste which is disposed at special pick-up at Scarboro.

*Response: The Plan addresses HHW.*

For Harford County, now, open Tollgate for disposal of branches and leaves on Wednesday from about 3PM to 7PM in the summer for a trial period. This can take some of the Saturday traffic and provide a chance for working citizens to recycle more.

*Response: Normal operating hours are 7am to 3pm on Saturdays only. Any additional hours beyond that are not currently budgeted due to additional budget cutbacks each year since 2008. Additionally, due to Union agreements, hours beyond that would require overtime with additional costs to the solid waste program as well as the costs for fuel and materials for the additional hours of operation.*

#### Commenter No. 10

This e-mail is in response to an AEGIS article on recycling trash plan.

Why not have a cash benefit for people who recycle. In theory someone is going to use the recycled trash to make something cheaper without having to fill up the land fills. Maybe they could get a discount on their trash removal if they recycle.

*Response: This proposal can not work universally under the current free enterprise system.*

Provide an option to pick up non-standard trash such as unused medicine and lawn chemicals.

*Response: As long as there is a free enterprise system, it is up to an agreement between the customer and their trash collector to provide those services.*

Offer an option to pick up lawn and tree material at times when a lot of stuff accumulates such as the Fall and after a storm.

*Response: As long as there is a free enterprise system, it is up to an agreement between the customer and their trash collector to provide those services.*

Just some ideas for discussion. Hope they are helpful.

## **II. Use of Joppa Property on Philadelphia Road**

Seven commenters replied they did not want a transfer station or trash dump located at property the County purchased on Philadelphia Road in Joppa. All of these commenters reside in the Joppa area. The Plan is not proposing a solid waste transfer station or dump in Harford County. Rather, input was sought

on the idea of providing a second homeowner convenient center somewhere closer to the greater populated areas of the County since the phone survey indicated many felt the Harford Waste Disposal Center location was inconvenient.

### **III. County Control of Trash Collection**

Some of the local trash collectors reached out to their customers to inform the County they should voice their opposition to the County controlling trash collection. The collectors provided pre-written responses so that the customer only had to fill in their name. None of the material provided to the customers gave a link to a copy of the July 15<sup>th</sup> presentation which was posted on the County website.

Based on the limited information which was provided to these residents, 801 commenters were opposed to County involvement with trash collection. Six commenters were in favor.

# APPENDIX 17

Bill No.15-004(To be included with Plan sent to the Maryland  
Department of the Environment after the County Council  
approves the Plan)

# APPENDIX 18

**BARRY GLASSMAN**  
HARFORD COUNTY EXECUTIVE

**BILLY BONIFACE**  
DIRECTOR OF ADMINISTRATION




**BRADLEY F. KILLIAN**  
DIRECTOR OF PLANNING & ZONING

## **CERTIFICATION OF THE DEPARTMENT OF PLANNING AND ZONING**



The Department of Planning and Zoning has reviewed the 2015 Solid Waste Management Plan and finds it to be in conformance with the 2012 Harford County Master Plan and Land Use Element Plan.

  
Bradley F. Killian, Director  
Department of Planning and Zoning

12/18/2014  
Date

*MARYLAND'S NEW CENTER OF OPPORTUNITY*

410.638.3103 | 410.879.2000 | TTY Maryland Relay 711 | [www.harfordcountymd.gov](http://www.harfordcountymd.gov)

220 South Main Street, Bel Air, Maryland 21014

THIS DOCUMENT IS AVAILABLE IN ALTERNATIVE FORMAT UPON REQUEST